Army Regulation 71–9

Force Development

Materiel Requirements

Headquarters
Department of the Army
Washington, DC
30 April 1997

UNCLASSIFIED

SUMMARY of CHANGE

AR 71–9
Materiel Requirements

This revision--

- Describes the Army’s new way of determining warfighting materiel requirements (chap 1).
- Implements Department of Defense Directive 5000.1 and Department of Defense Regulation 5000.2R (chap 1).
- Assigns responsibilities for the combat development portion of the materiel acquisition management process (chap 2).
- Mandates the use of the formats prescribed by Chairman of the Joint Chiefs of Staff Instruction 3170.01 (Memorandum of Policy 77) in the preparation of materiel requirements documents (chap 3).
- Provides the policy for requirements streamlining through horizontal technology integration and the Warfighting Rapid Acquisition Program (chap 5).
- Updates policies for preparing requirements documents and conducting supporting analyses (chap 6).

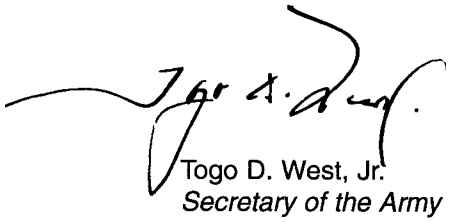
Headquarters
Department of the Army
Washington, DC
30 April 1997

*Army Regulation 71–9

Effective 30 May 1997

Force Development

Materiel Requirements



Togo D. West, Jr.
Secretary of the Army

History. This is a revision of AR 71-9, dated 20 February 1987. Because the publication has been extensively revised, the changed portions have not been highlighted.

Summary. This regulation, that covers policies and procedures for materiel warfighting requirements, has been revised. It implements DoD Directive 5000.1 and DoD Regulation 5000.2R. It also updates policies, procedures, and responsibilities for the combat development portion of the materiel acquisition management process, preparation of materiel requirements documents, and other combat development products.

Applicability. This regulation applies to the Active Army, Army National Guard, and the U.S. Army Reserve. It applies to personnel conducting operational requirements determination activities for systems acquisition and modification. It applies to the determination of requirements for weapons and materiel systems, automated information systems, information technology programs, and special access programs. It also applies to requirements determination for clothing and individual equipment for direct use by or in support of the Army warfighter in training for and conducting operational missions (tactical or other) or connecting that warfighter to the sustaining base.

Proponent and exception authority. The proponent for this regulation is the Deputy Chief of Staff for Operations and Plans (DCSOPS). The DCSOPS has the authority to approve exceptions to this regulation that are consistent with controlling law and regulations. The DCSOPS may delegate this authority, in writing, to a division chief within the proponent agency in the grade of colonel or the civilian equivalent.

Army management control process. Following a review of guidance in AR 11-2, it is determined that this regulation does not contain management control provisions.

Supplementation. Supplementation of this regulation is prohibited unless prior approval is obtained from HQDA (DAMO-FDJ), 400 ARMY PENTAGON WASH DC 20310-0400.

Suggested Improvements. Users may send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to HQDA (DAMO-FDJ), 400 ARMY PENTAGON WASH DC 20310-0400.

Distribution. Distribution of this publication is made in accordance with the initial distribution number (IDN) 092394, intended for command levels C, D, and E for Active Army, and D and E for Army National Guard and United States Army Reserve.

Contents (Listed by paragraph and page number)

*This regulation supersedes AR 71-9, 20 February 1987, DA Pamphlet 25-2, 30 April 1991, and the requirements determination and documentation guidance of AR 25-3, 15 October 1989, and AR 700-96, 15 November 1990.

UNCLASSIFIED

Chapter 1
Introduction

1–1. Purpose

This regulation establishes policies and assigns responsibilities for—

a. Identification of materiel warfighting requirements.

b. Preparing requirements documents to acquire warfighting systems and training aids, devices, simulations, and simulators (TADSS).

c. Conducting supporting analyses.

d. Forming and conducting integrated concept teams (ICTs) for requirements determination and documentation and their transition to acquisition integrated product teams (IPTs).

1–2. References

Required and related publications are listed in appendix A.

1–3. Explanation of abbreviations and terms

Abbreviations and special terms used in this regulation are explained in the glossary.

1–4. Policy guidance

Department of Defense (DoD) Directive (DoDD) 5000.1 and DoD Regulation 5000.2R provide mandatory DoD acquisition policy and procedures including requirements documentation and approval guidance for major defense acquisition programs (MDAP) for both materiel and automated information systems. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01 (Memorandum of Policy (MOP) 77 - Requirements Generation System) mandates policy and procedural guidance for the requirements generation system to include guidance on key performance parameters (KPPs), measures of effectiveness, and the Joint Requirements Oversight Council (JROC). AR 70-1 provides Army acquisition guidance for materiel and information systems. This regulation provides Army requirements determination and documentation policies and responsibilities supporting all Army acquisitions categories (ACAT) I/IA through IV materiel and information systems. The terms materiel and materiel system in this regulation will apply to materiel and information systems unless specifically identified otherwise. Governing policies follow:

a. The requirements determination process will provide a current and future Army capable of success in any contingency from humanitarian assistance to full tactical operations in joint and combined environments. The process will be responsive to the urgent materiel requirements of the deployed warfighter as well as project the full set of doctrine, training, leader development, organizational design, materiel, and soldiers (DTLOMS) requirements for the Army to be mission capable in near-, mid- and far-term operations.

(1) Field Commanders document and submit their urgent warfighting and training operational requirements and obtain support via the operational needs statements (ONS) process in chapter 3.

(2) Commanders with combat developments missions conduct continuing analyses to identify and define near through far term DTLOMS requirements.

(3) Near term requirements occur when a field commanders ONS represents a broad Army mission urgent requirement with solution, a solution is found for a previously identified continuing urgent operational capability, or technology provides previously unforeseen critical leap-ahead operational capability.

(4) Near-, mid-, and far-term (that is, future) operational requirements will be operations concepts based, holistic operations oriented, and capabilities focused.

b. Future operational requirements for all DTLOMS domains will be related to the U.S. Army Training and Doctrine Command (TRADOC) approved overarching operational concept and associated lower level operational concepts. Requirements not related to these concepts will not be resourced. TRADOC integrated and approved listing of future operational capabilities (FOCs) from these concepts serve as a control mechanism for requirements determination process, and authority for supporting studies and experimentation, and a device for linkage between requirements documentation and the concepts.

c. Requirements determination is the work of integrated concept teams (ICTs), made up of people from multiple disciplines. These teams' efforts may include concept development or development materiel operational requirements development and documentation. DTLOMS solution sets will be documented in ICT minutes or reports. ICTs will operate on principals similar to acquisition integrated product teams (IPTs) in DoD 5000.2R to identify and resolve issues early. An ICT will include representatives of Army requirements process stake-holders and other principal contributors, including academia and industry, when appropriate. The Office of the Secretary of Defense (OSD), other services, commanders in chief (CINCs), and Joint Staff, will be invited to send representatives, as appropriate, when their interest is known or suspected.

d. A materiel requirement will only be developed for an approved FOC after all other possible doctrine, training, leader development, or organizational solutions are deemed unable to solve the FOC. The priority order of consideration is doctrine, training, leader development, organizational design, and finally materiel. Mission need statements (MNSs) will be prepared in accordance with MOP 77 format guidelines for those materiel operational requirements with ACAT I or IA program potential and other programs representing a new Army mission or a potential program using a significant leap-ahead technology. Operational requirements documents (ORDs) will be prepared in accordance with DoD 5000.2R format guidance for all warfighting materiel operational requirements.

e. All ACAT I, IA, II, III, and IIIA materiel programs will have an ORD. ACAT IV materiel programs for modification table of organization and equipment (MTOE), deployable tables of distribution and allowances (TDA), warfighter training, operations planning and rehearsal, and information technology (IT) providing interface to deployed units will have ORDs. Most ACAT IV base operations materiel are not warfighting requirements, will not have ORDs, and can be procured following major Army command (MACOM) standard acquisition procedures. TRADOC will provide tailoring guidelines for MNS and ORDs implementing MOP 77 and DoD 5000.2R.

f. All IT products must comply with the Army's operations, systems, and technical architectures. MACOM information management offices will review and ensure compliance with architectures.

g. A holistic threat analysis depicting the global situation and projected warfighting capabilities of potential adversaries is a key element of the requirements determination process. The cold war concept of limiting the definition of threat to merely opposing enemy forces on the ground is no longer relevant. The increasing number of Army roles, along with the number of potential regions in which the Army could perform these roles, are critical considerations in any threat analysis performed by combat developers (CBTDEVs).

h. Standardization will be one of the key focuses of CBTDEVs/training developers (TNGDEVs) throughout the requirements determination and acquisition management process. Properly applied, standardization can significantly reduce life-cycle costs, schedules, and risks, while improving quality and logistic support.

i. Close coordination will be maintained between CBTDEVs/TNGDEVs and the science and technology (S&T) community to ensure that technology investments are appropriately focusing on identified FOCs. Periodic reviews will be conducted with program offices, laboratories, users, and maintainers to assess the technical status, emerging performance, affordability, and remaining technology shortfalls. Modeling and simulation will be used to preclude unnecessary and impractical development.

j. All system developments have many capability characteristics that are defined in requirements documentation. Key performance parameters (KPPs) are those system characteristics that define whether or not a system will be capable of mission accomplishment. KPPs are, by definition, characteristics that can cause a concept or system to be reevaluated and a program to be reassessed for restructuring or termination. All requirements documentation will contain

KPPs which will in turn be documented in the system acquisition program baseline (APB). For ACAT I systems, KPPs are validated and approved by the JROC even if the authority for the requirements document has been delegated to the component. TRADOC validates and approves other KPPs.

k. When developing system characteristics and performance parameters, cost must be considered on an equal level. In other words, cost will be treated as an independent variable along with others used to define a system. This concept—cost as an independent variable (CAIV)—will not preclude consideration and evaluation of a new, expensive, high potential, leap-ahead DTLOMS technology.

Chapter 2
Responsibilities

Section I
Introduction

2–1. General

The responsibilities of the Headquarters, Department of the Army (DA) (HQDA) staff, staff agencies, and MACOMs are established in the AR 10-series. This chapter contains specific responsibilities with respect to combat and TADSS developments and materiel requirements.

a. All HQDA staff, staff agencies, and MACOMs will—

(1) Participate and support the Warfighting Rapid Acquisition Program (WRAP), as appropriate.

(2) Provide representatives, as appropriate, to TRADOC-led ICTs and U.S. Army Materiel Command (AMC)-led and program executive office (PEO)-led IPTs.

(3) Support the implementation of horizontal technology integration (HTI) policies and procedures.

b. Specific additional responsibilities are set forth in the following paragraphs.

Section II
Headquarters Department of the Army Staff

2–2. Deputy Chief of Staff for Operations and Plans (DCSOPS)

The DCSOPS will—

a. Develop Army policy and guidance for materiel requirements and combat development programs. This includes the requirements determination process, prioritization, resourcing, and integration of materiel warfighting requirements.

b. Plan for mid- and long-range force development to include the following:

(1) Prescribing mission and operational capability goals.

(2) Establishing priorities for developing and acquiring materiel systems and embedded training system TADSS and nonsystem TADSS.

(3) Integrating resultant materiel systems and TADSS into the force structure.

c. Establish and validate Army priorities throughout the planning, programming, budgeting and execution system (PPBES) to include research, development and acquisition (RDA) programs.

d. Coordinate force modernization activities, develop modernization plans, and monitor the impact of force modernization planning and execution for the total Army, with the assistance of the Assistant Secretary of the Army (Research, Development and Acquisition) ASA(RDA)).

e. Conduct force feasibility reviews (FFRs) to assess supportability and affordability for structure, manpower, equipment, dollars, facilities and training.

f. In coordination with ASA(RDA), establish policy and guidance for analysis of alternatives (AoA); for ACAT I and II programs, designate the organization responsible for conducting the AoA; develop guidance for conduct of AoAs; and develop AoA tasking document that incorporates OSD (Program Analysis & Evaluation (PA&E)) guidance and study advisory group (SAG) procedures.

g. Serve as the co-proponent with the ASA(RDA) for the Army RDA Plan.

h. Assist the ASA(RDA) in preparing acquisition program documentation, and adjustments for programming and budgeting.

i. Forward MNS for potential ACAT I programs to the JROC for validation. Forward ACAT I ORD to JROC for validation of KPPs and assignment of approval authority.

j. Establish policy and guidance for cost, schedule, and performance tradeoff analyses.

k. Establish DA policy and guidance for and validate and approve field commanders' ONS.

l. Assign catalog of approved requirements documents (CARDS) reference number, and maintain and publish CARDS.

m. Co-chair the WRAP Army Systems Acquisition Review Council (ASARC).

n. Review and evaluate requirements based on issues raised by other Services, the Joint staff, and OSD and recommend changes to Commander (CDR), TRADOC.

o. Serve as the Army advocate on JROC issues, unify and focus the Army JROC/Joint Warfighting Capabilities Assessments (JWCA) effort. Provide coordination, liaison, and integration across the Army staff (ARSTAF), MACOMs, the Joint Staff, and CINC representatives for the Army JROC effort.

p. Provide ARSTAF oversight of the development of the operational architecture (OA) IT and requirements as well as synchronizing the technical and systems architectures.

q. Ensure HTI policies and procedures are implemented and followed in the requirements prioritization process.

2–3. Assistant Secretary of the Army (Financial Management and Comptroller) (ASA(FM&C))

The ASA(FM&C) will—

a. Carry out all financial management responsibilities assigned under 10 USC, Section 3022, as pertains to DA and Section 135(c), as pertains to the Comptroller of the DoD.

b. Specifically, manage all budgeting activities in support of the Army materiel requirements processes and RDA modernization program, with the framework of the planning, programming, and budgeting system (PPBS) and the PPBES.

c. Provide oversight, review and approval for all costing and economic analysis efforts, as carried out by the U.S. Army Cost and Economic Analysis Center within the Cost and Economic Analysis Program.

(1) For ACAT I and special interest programs ASA(FM&C) will establish an Army Cost Review Board (CRB) of senior leadership to review the life cycle cost estimates and recommend the Army cost position (ACP) to the ASA(FM&C) for approval. The CRB membership includes the Principal Deputy ASA(FM&C); Deputy for Cost Analysis (nonvoting executive secretary); Director for Investment; Deputy ASA for Budget; Deputy Director, PA&E; AMC, Chief, Cost Analysis Division; Director, Assessment & Evaluation; Director, Resource Analysis Division, TRAC-White Sands; and the Deputy Director of Information Systems for Command, Control, Communications, and Computers (DISC4).

(2) The ASA(FM&C) Deputy for Cost Analysis will ensure that the ACP reflects the costs and risks associated with the program in concurrence with the CAIV process.

(3) The ASA(FM&C) will ensure that the ACP is completed in a timely basis to allow the milestone decision authority (MDA) to make the best decision for a given program.

2–4. Assistant Secretary of the Army (Installations, Logistics and Environment)(ASA(IL&E))

The ASA(IL&E) has responsibility for policy on supportability and sustainability and is supported by the Deputy Chief of Staff for Logistics (DCSLOG) who has ARSTAF responsibility for logistical acceptability and supportability of materiel systems, interoperability,

integrated logistics support (ILS), materiel release, and logistics research and development (R&D) programs for the Army.

2–5. Assistant Secretary of the Army (Research Development and Acquisition) (ASA(RDA))/Army Acquisition Executive (AAE)

The ASA(RDA) will—

a. Serve as the AAE.

b. As the AAE, be responsible for administering acquisition programs according to DoD policies and guidelines.

c. Exercise the powers and discharge the responsibilities as set forth in DoDD 5000.1 for component acquisition executives.

d. In coordination with the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS), establish policy and guidance for AoAs; for ACAT I and II programs, designate the organization responsible for performing system engineering tradeoff analyses for the AoA; and provide issues and alternatives to ODCSOPS for inclusion in the AoA tasking document.

e. Designate the Army command or agency responsible for performing system engineering tradeoff analyses for the AoA, and provide issues, alternatives, and broad guidance for ODCSOPS inclusion in the AoA tasking document.

f. Develop guidance, in coordination with the ODCSOPS, and serve as co-proponent for the RDA Plan.

g. Formulate Army-wide S&T base strategy, policy, guidance, and planning.

h. Establish and validate Army Technology Base priorities throughout the PPBES.

i. Approve and resource Army advanced technology demonstrations (ATDs) and Advanced Concepts and Technology II (ACT II) Programs.

j. Co-chair the WRAP ASARC, as appropriate.

k. Ensure PEOs/program/project/product managers (PMs) integrate embedded training requirements early in the design of new or improved materiel systems.

l. Establish and implement Army HTI policy.

m. Administer the Army's Operations and Support Cost Reduction (OSCR) program and provides policy and procedure guidance.

2–6. Assistant Chief of Staff for Installation Management and Environment (ACSIM)

The ACSIM will—

a. Develop criteria for the mitigation of environmental impacts.

b. Review emerging Army systems for environmental effects.

2–7. Director of Information Systems for Command, Control, Communications, and Computers (DISC4)

The DISC4 will—

a. Be the Army's chief information officer (CIO) and has ARSTAF responsibility and serves as the military deputy (MILDEP) to the AAE for Army IT and IT activities. These include establishing and approving policies, procedures, and standards for the planning, programming, life-cycle management, use of Army IT resources, and responding to and validating all warfighting requirements during world-wide staffing.

b. Validate all IT related to MNS, ORD, and ONS by ensuring—

(1) They conform with the Army Technical Architecture (ATA) and address integration into Army Enterprise Architectures.

(2) The requirement has gone through business process reengineering (BPR).

(3) They are in concert with emerging command, control, communications, computers, and intelligence (C4I) technologies.

c. Have overall responsibility for Army software policy for both automated information systems (AIS) and weapon systems.

d. Oversee the activities of PEOs or PMs managing command, control, communications, and computer and IT acquisition programs.

e. Provide technical oversight for both AIS and weapon systems on software and IT matters during the acquisition approval process.

f. Direct and approve standards for data and interoperability of products, to include joint and combined programs.

g. Provide software R&D advice and management oversight for all systems during the ASARC and the Major Automated Information Systems Review Council (MAISRC) processes.

h. Review materiel system programs and WRAP candidate systems for compliance with HQDA policy for software reuse, technical and systems architectures, data element standardization, spectrum management, and Ada initiatives.

i. Ensure proper implementation of the ILS and manpower and personnel integration (MANPRINT) programs in IT.

2–8. Deputy Chief of Staff for Intelligence (DCSINT)

The DCSINT will—

a. Have ARSTAF responsibility for intelligence, counterintelligence, and security support to the systems acquisition process.

b. Establish and implement threat support and documentation policy for force, combat, training, and materiel development activities to include all technology base programs and nontraditional acquisition techniques.

c. Designate HQDA threat integration staff officers (TISOs) to manage the threat integration support process for ACAT I and II programs, ACAT IA programs when required, and monitor the threat integration support to ACAT III/IV programs and ACAT IAM and IAC programs when required.

d. Approve and validate threat documentation, and obtain Defense Intelligence Agency (DIA) validation of threat documentation to support Defense Acquisition Board (DAB) review.

e. Review and monitor the threat support process to ensure consistent application of threat in support of ACAT I and II programs, selected OSD test and evaluation (T&E) oversight systems, DA-directed studies, and selected CBTDEV-directed studies.

2–9. Deputy Chief of Staff for Logistics (DCSLOG)

The DCSLOG will—

a. Have ARSTAF responsibility for logistical acceptability and supportability of materiel systems, interoperability, ILS, materiel release, and logistics R&D programs for the Army.

b. Establish the HQDA logistic position concerning acceptability, deployability, and supportability for all acquisition programs.

c. Serve as the logistician in the materiel acquisition process for other than medical equipment, and conduct surveillance over logistics aspects of materiel acquisition and modification programs to ensure supportable systems.

d. Provide policy guidance for logistics for medical and engineer materiel acquisition.

2–10. Deputy Chief of Staff for Personnel (DCSPER)

The DCSPER has ARSTAF responsibility for monitoring materiel requirements documents, system MANPRINT management plans, acquisition strategies/plans, and other RDA activities to ensure that MANPRINT is addressed throughout the life-cycle of a program. Specific to requirements, the DCSPER will provide active duty military personnel cost information to the Director, PA&E for use in cost analysis and review of existing or developmental systems.

2–11. Chief of Engineers (COE)

The COE will—

a. Assume responsibility, under the general supervision of the AAE, for the research, development, test and evaluation (RDTE) of fixed and floating power systems; high-voltage generation applications (to include nuclear energy applications); systems, equipment, procedures, and techniques applicable to the terrestrial and topographic sciences; and remote sensing.

b. Review all emerging Army systems for digital topographic data (DTD) and DTD application software requirements.

c. Preserve and improve environmental quality associated with construction and facilities and Army environmental quality and R&D activities covering atmospheric, terrestrial, and topographic sciences.

d. Monitor requirements and R&D necessary to provide construction design criteria, construction techniques, and construction material for the Army, Air Force, and other Government agencies.

e. Advise and assist TRADOC CBTDEVs for those combat and training developments which relate to the COE.

f. Forward all operational concepts and materiel requirements documents to TRADOC for approval.

2–12. The Surgeon General (TSG)

TSG will—

a. Have ARSTAF responsibility for medical RDTE for the Army, and is the Army Medical materiel developer (MATDEV).

b. Develop policy, responsibilities, and procedures to ensure implementation of systems acquisition policy as it applies to combat medical systems, medical readiness and health care programs, and other assigned Army and joint service requirements.

c. Assign support responsibilities for medical materiel development and acquisition to agencies and activities under TSG command and control.

d. Recommend to TRADOC materiel requirements and associated priorities for medical readiness and health care programs.

e. Serve as a member of the ASARC for medical issues, including health hazard assessment and hazards remediation.

f. Establish mission area interface with TRADOC for all medical programs, ensuring that requirements and interests of each participating service are provided full consideration in medical programs for which the Army has lead agency or executive agency responsibility.

g. Forward all materiel requirements documents to TRADOC for approval.

2–13. The Judge Advocate General (TJAG)

TJAG will—

a. Have responsibility for RDA related legal review.

b. Ensure that such weapons, weapon systems, and their intended use in armed conflict are consistent with—

(1) The obligations assumed by the U.S. under all applicable treaties.

(2) International law and the laws of war.

c. Advise and assist TRADOC for those combat and training developments which relate to the TJAG functional area of interest.

d. Review actions for compliance with environmental policy.

2–14. Chief of Chaplains (CCH)

The CCH will—

a. Have responsibility for Chaplaincy RDTE for the Army and is the Army Chaplaincy MATDEV.

b. Develop policy and procedures to ensure implementation of systems acquisition policy as it applies to the combat religious support system, religious and moral readiness and pastoral care programs, and other assigned Army and joint service requirements.

c. Assign support responsibilities for Chaplaincy materiel development to agencies and activities under CCH control.

d. Coordinate with TRADOC, AMC, and other MACOMs to ensure Chaplaincy materiel requirements and interests are provided full consideration and are integrated into the Army materiel development system.

2–15. Director, Program Analysis and Evaluation (PA&E)

The Director, PA&E will—

a. Develop the program objective memorandum (POM) to include resource guidance.

b. Review and analyze fiscal programs, requirements, resource planning, and resource allocation for the program years.

c. Conduct and present affordability assessments to support DoD and HQDA ACAT I oversight and review process.

d. Ensure the overall discipline of the PPBES and manage the programming phase of the PPBES.

Section III
Major Army Commands (MACOMs)

2–16. Commanding General (CG), Military Traffic Management Command (MTMC)

The CG, MTMC will—

a. Provide transportability engineering advice and analyses to the MATDEV, CBTDEV and TNGDEV.

b. Provide item, unit, and system transportability assessments for milestone decision review (MDR).

c. Provide transportability approval or identify corrective actions required to obtain approval for all transportability problem items.

d. Review all materiel requirements documents to assess adequacy of transportability.

2–17. CG, U.S. Army Medical Command (MEDCOM)

The CG, MEDCOM will—

a. Be the medical CBTDEV, TNGDEV, trainer, user representative, and operational tester.

b. Conduct medical combat and training development activities as assigned by CG, TRADOC and TSG.

c. Review and evaluate materiel and TADSS requirements documents to identify and assure that adequate consideration is given to the prevention of health hazards from operating or maintaining materiel systems, and conduct the health hazard assessment (HHA) program, as required.

d. Conduct and support assigned operational T&E.

e. Forward warfighting concepts and requirements documents to TRADOC for review and approval.

2–18. CG, U.S. Army Intelligence and Security Command (INSCOM)

The CG, INSCOM will—

a. Be the CBTDEV and TNGDEV for strategic signals intelligence (SIGINT) and information security (INFOSEC) of which INSCOM is sole user.

b. Prepare requirements documents and serve as the Army CBTDEV during development and fielding of new SIGINT and INFOSEC systems under the purview of the National Security Agency (NSA) and having sole application to U.S. SIGINT and INFOSEC systems. Forward warfighting concepts and requirements documents to TRADOC for review and approval.

c. Coordinate with the PEO or MATDEV on matters pertaining to acquisition of INSCOM sole-user SIGINT and intelligence, security and electronic warfare (ISEW) systems.

d. Coordinate with the CG, TRADOC, on requirements determination for other INSCOM sole user ISEW systems and conduct combat and training developments for these Army systems when directed by HQDA, and or Director, Central Intelligence (DCI), or at the request of CG, TRADOC.

e. Ensure documentation of requirements for training support products, system TADSS, and or embedded training for INSCOM systems.

f. Provide threat documentation to TRADOC as validated and approved by HQDA, DCSINT.

g. Recommend to CG, TRADOC materiel requirements and associated priorities for strategic intelligence and security readiness.

2–19. CG, U.S. Army Materiel Command (AMC)

The CG, AMC will—

a. As a MATDEV, be responsible for the RDTE, the acquisition, and logistics support of assigned materiel in response to approved materiel requirements.

b. Plan, coordinate, and provide functional support to PEOs and PMs. Support includes, but is not limited to, procurement and contracting, legal, managerial accounting, cost estimating, systems engineering, conducting system TADSS and embedded training concept formulation, developmental test, logistics support analyses, MANPRINT, environmental, intelligence and threat support, configuration management, and conducting various independent assessments and analyses.

c. Provide overall management of the Army's technology base (less Class VIII), including identification of maturing technologies necessary to support acquisition of warfighting materiel systems.

d. Assist the CBTDEV and TNGDEV in the requirements determination process.

e. Subsequent to Milestone (MS) I, identify system specific intelligence and counter-intelligence support requirements and critical intelligence categories (CICs) in coordination with CBTDEV/TNGDEV.

f. Conduct or assist in the development of tradeoff analyses.

g. Provide RDA science and infrastructure input to HQDA for the Army RDA Plan.

h. Provide survivability, vulnerability, or lethality assessments in coordination with U.S. Army Operational Test and Evaluation Command (OPTEC). Provide survivability, vulnerability, and lethality enhancement expertise for all Army materiel programs.

i. Conduct a crosswalk, with the CBTDEV (TNGDEV for TADSS), of the ORD to the request for proposal (RFP) to verify that the RFP, to include system specification or purchase description and the statement of work (SOW), accurately reflects the operational requirements stated in the ORD for all programs. The MATDEV and CBTDEV (MATDEV and TNGDEV for TADSS) will formally certify that the RFP has been crosswalked with the ORD and is in agreement prior to the ASARC or program review.

j. Provide initial and updated cost and system performance estimates for battlefield and peacetime operations as inputs to supporting analysis and program decisions.

k. Plan, coordinate, and resource modifications to training hardware, software, embedded training and or TADSS resulting from modifications to assigned systems.

l. Plan and program resources for life-cycle logistical support of TADSS fielded in support of assigned materiel systems and nonsystem TADSS.

m. Subsequent to MS I, prepare, review, and coordinate with CBTDEV, and forward to DA DCSINT system threat assessment reports (STARs) for designated ACAT I and II and selected OSD T&E oversight systems. Subsequent to MS I, prepare, coordinate with CBTDEV, and approve system threat assessments (STAs) for ACAT III and IV systems, unless specifically waived. Provide information copies to DA DCSINT.

n. Subsequent to MS I, update STARs every 18 months, or when significant changes in either the threat or U.S. system specifications and characteristics occur.

2–20. CG, U.S. Army Training and Doctrine Command (TRADOC)

CG, TRADOC will—

a. Be the Army's architect for the future and is charged to chart the course for the Army.

b. Be the Army's primary combat developer and training developer.

c. Guide and discipline the requirements process.

(1) Provide requirements determination and documentation procedures and process guidance for the entire Army.

(2) Establish the specific policies and procedures for the review, integration, and approval of model and simulation (M&S) requirements which complements the materiel acquisition policies and recognizes the unique requirements issues of M&S.

(3) Establish and implement horizontal requirements integration (HRI) policy.

d. Approve requirements with any warfighting impact. Approve Army M&S requirements as a subset of materiel requirements.

(1) Approve ICT minutes or reports containing proposed solution sets for FOCs.

(2) Approve MNS and ORDs produced by the Army community and forward to DCSOPS for prioritization and resourcing. Provide recommendations for joint service MNS and ORDs and cooperative development requirement documents

e. Assist DA to prioritize and justify warfighting requirements to—

(1) Determine applicability of ONS to future Army-wide requirements and assign to a proponent for requirement documentation. Advise ODCSOPS on available experimentation results/insights relative to ONS and potential for army-wide application.

(2) Provide insights and descriptive information for materiel programs.

(3) Support ODCSOPS by presenting documents and information to the JROC and JWCA and assisting in issue resolution.

f. Coordinate and integrate the total combat/training developments efforts of the Army.

(1) Provide, with appropriate support from other MACOMs, the future warfighting vision overarching concept and FOC, the start point for requirements determination process.

(2) Develops and maintains the C4I OA.

(3) Be primary source for determining need for and preparing requirements and requirements documents for TADSS and embedded training.

(4) Determine need for and obtain Chief of Staff, U.S. Army (CSA) approval for conduct of an Army warfighting experiment (AWE).

(5) Plan, support or conduct, and report concept evaluation programs (CEPs), and AWEs in support of requirements determination.

g. When required by HQDA, conduct AoA for ACAT I, IA, and II programs. When required by the MDA, conduct AoA for all other ACAT programs.

h. Provide representation to Army S&T reviews and management teams.

2–21. CG, U.S. Army Special Operations Command (USASOC)

The CG, USASOC will—

a. Establish mission area interface with TRADOC for all programs, ensuring that requirements and interests of each participating agency are provided full consideration in programs for which the Army has lead agency or executive responsibility.

b. Serves as the special operations trainer and user representative.

c. Forward all non-SOC unique warfighting capability requirements and documents to CG, TRADOC for approval.

d. Forward SOC unique requirements documents to CG, TRADOC for review.

e. Monitor TRADOC projects and identify needs that affect the USASOC mission and responsibility.

f. Support TRADOC field activities, conduct and support testing, and monitor RDA projects to include potential force standardization and interoperability.

g. Participate in warfighting experiments, as appropriate.

2–22. Commanders of other major Army commands (MACOMs)

MACOM CDRs will—

a. Monitor RDTE projects and identify needs that affect the MACOMs mission and responsibility.

b. Support RDTE field activities, support testing, and monitor RDA projects to include potential for standardization and interoperability.

c. Produce designated warfighting concepts, as appropriate and forward to TRADOC for review and appropriate action.

d. Forward critical, time-sensitive ONSs to DCSOPS for review/approval/action. Provide information copy of ONS to TRADOC for review/appropriate action.

e. Participate in warfighting experiments, as appropriate.

f. Submit C4I OA and systems architecture (SA) to HQ, TRADOC for integration into the Army-wide C4I OA.

Section IV
Other DA Agencies

2–23. CG, U.S. Army Operational Test and Evaluation Command (OPTEC)

The CG, OPTEC will—

a. Review all draft materiel requirements documents for T&E implications.

b. Assist TRADOC (CBTDEV/TNGDEV) in developing evaluatable, operational relevant, total system focused critical operational issues and criteria (COIC). Provide advice concerning methods and measures to evaluate the system against the COIC and advise on the resources and ability to test and evaluate the system.

c. Support the TRADOC AWE program and the CEP.

2–24. CG, U.S. Army Medical Research and Materiel Command (USAMRMC)

The CG, USAMRMC will—

a. Be the medical MATDEV, logistician, and developmental tester and is responsible for RDTE, the acquisition, and logistic support of assigned materiel in response to approved materiel requirements

b. Plan, program, budget, and execute medical RDTE tasks that support system RDA to include required system training support products, TADSS, and or embedded training.

c. Plan, coordinate, and provide functional support to USAMRMC organizations. Support includes, but is not limited to, procurement and contracting, legal, managerial accounting, cost estimating, systems engineering, conducting system TADSS and embedded training concept formulation, developmental T&E, ILS, MANPRINT, environmental, configuration management, and conducting various independent assessments and analyses.

d. Assist the medical CBTDEV/TNGDEV in the requirement determination process.

e. Review requirement documents to determine their adequacy and feasibility and for logistical support aspects of materiel systems to include ILS.

f. Develop and maintain the physiological, psychological, and medical data base to support the HHA, system safety assessments (SSA), and human factors engineering analysis (HFEA).

g. Evaluate and manage the materiel readiness functions in the medical materiel acquisition process.

h. Function as TSG agency for the materiel acquisition of medical nondevelopmental items (NDI), commercial off-the-shelf (COTS) items, and sets, kits, and outfits.

2–25. CG, U.S. Army Medical Department Center and School (AMEDDC&S)

The CG, AMEDDC&S will—

a. Be the medical CBTDEV, TNGDEV, doctrine developer, and operational tester and evaluator.

b. Develop doctrine, organizations, and systems requirements within the guidelines established by the CG, TRADOC and in accordance with Army health care standards established by TSG (see AR 40-60).

2–26. Director, U.S. Army Nuclear and Chemical Agency (USANCA)

The Director, USANCA will—

a. Establish nuclear survivability criteria and nuclear, biological, and chemical (NBC) contamination survivability criteria for Army materiel (AR 70-1 and AR 70-75).

b. Assist CBTDEVs with the application of nuclear and NBC contamination survivability criteria for systems and items and assist in the evaluation of system/item survivability shortfalls (AR 70-75).

c. Monitor the Army's nuclear survivability criteria and NBC contamination survivability programs (AR 70-1 and AR 70-75).

d. Provide the following:

(1) Members to the Nuclear and Chemical Survivability Committee (NCSC) Secretariat (NCSCS) to serve in the following capacities:

(a) Director (nuclear survivability matters).

(b) Director (NBC contamination survivability matters).

(c) USANCA representative on nuclear survivability matters.

(d) USANCA representative on NBC contamination survivability matters. (AR 15-41).

(2) Administrative support, schedule meetings, maintain and publish minutes, and staff and coordinate actions of the NCSC and NCSCS. (AR 15-41)

2–27. Combat developers (CBTDEVs) and training developers (TNGDEVs)

CBTDEVs and TNGDEVs will—

a. Develop and document their proposed operational concepts augmenting the TRADOC overarching concept.

b. Develop and document materiel requirements (MNSs and ORDs) for their proposed systems and modifications.

c. Assist ODCSOPS and TRADOC with prioritization and justification of materiel programs by providing insights and descriptive information for their programs.

d. Support ODCSOPS and TRADOC by presenting documents and information to the JROC and JWCA and assisting in issue resolution for their programs.

e. Advise ODCSOPS and TRADOC on any available experimentation results relative to ONS received for needs in their assigned missions, and indicate potential for Army-wide application.

f. Establish user position on acceptability of safety and health hazard risks at MDRs.

g. Coordinate with MATDEV on matters pertaining to materiel acquisition management.

h. Develop MS III focused COIC for T&E.

i. Conduct a crosswalk, with the MATDEV, of the ORD to the RFP to verify that the RFP, to include system specification or purchase description and the SOW, accurately reflects the operational requirements stated in the ORD for all programs. The CBTDEV and MATDEV (TNGDEV and MATDEV for TADSS) will formally certify that the RFP has been crosswalked with the ORD and is in agreement prior to the ASARC or program review.

j. Participate with the MATDEV in cost, schedule, and performance tradeoff analyses.

k. Establish user constraints, objectives, and requirements for supportability including TADSS; participate in design reviews, program reviews, in-process reviews, MDRs, ASARC or DAB, and other forums to assure early and continuous consideration of supportability.

l. Conduct experiments supporting their requirements determination function.

m. Develop requirements that lead to acquisition programs for multiple weapons system platforms. HRI is the primary source of new HTI programs.

n. Prior to MS I, prepare, coordinate with AMC, and forward to DA DCSINT STARs for designated ACAT I and II and selected OSD T&E oversight systems. Prior to MS I, prepare, coordinate with AMC and approve STAs for ACAT III and IV systems, unless specifically waived.

(1) In coordination with the MATDEVs, develop system specific CICs to be included in STARs/STAs.

(2) Prior to MS I, update STARs every 18 months, or when significant changes in either the threat or U.S. system specifications and characteristics occur.

o. Provide representation at DA and OSD overarching and MATDEV/PM integrating and working IPTs (WIPTs) for TRADOC proponent programs.

p. Represent the soldier throughout the requirements and acquisition processes.

2–28. Program executive officers (PEOs) and direct-reporting program managers (PMs)

The PEOs and direct-reporting PMs will—

a. Assist the CBTDEV and TNGDEV in developing ORDs by providing technical, availability, performance, anticipated materiel acquisition cost, and schedule type information as needed.

b. Fund and conduct concept formulations for all system TADSS in support of assigned system.

c. Embed system training capabilities into assigned materiel systems in accordance with the approved system ORD and in coordination with the CBTDEV/TNGDEV.

d. Establish visibility of modeling and simulation (M&S) funding within the system management decision package (MDEP). The funding line should have sublines identified "System TADSS" and "Verification and Validation" .

e. Fund, develop, acquire, and field the subsystem training package with the materiel system.

f. Apply DoD common framework for M&S standards in all TADSS design/development, as required.

g. Program and budget funds to support changes to system and nonsystem TADSS resulting from changes or modification to the system supported.

h. Program and budget resources for the integration of materiel systems, digitized components/subsystems, and system TADSS/embedded training into the Army Combat Training Centers (CTCs) instrumentation systems in coordination with CG, AMC (AMSTI-CO) .

i. Program and budget resources for TADSS specified in the ORD.

j. Program and budget resources to support and ensure attention to and integration of MANPRINT in the RDTE and acquisition processes.

k. Provide MATDEV perspective through input to the RDA Plan and the Army Modernization Plan.

l. Lead the cost performance IPT (CPIPT) to institute the CAIV process beginning with the approval of the MNS.

m. Provide validated variable fidelity model (not simulation) of system characteristics and capabilities with supporting parametric data (unclassified, classified if appropriate) in accordance with Army M&S standards for assigned systems to support TADSS development.

n. Conduct a crosswalk, with the CBTDEV (TNGDEV for TADSS), of the ORD to the RFP to verify that the RFP, to include system specification or purchase description and the SOW, accurately reflects the operational requirements stated in the ORD for all programs. The MATDEV and CBTDEV (MATDEV and TNGDEV for TADSS) will formally certify that the RFP has been crosswalked with the ORD and is in agreement prior to the ASARC or program review.

2–29. Program, project, and product managers (PMs)

The PMs will—

a. Plan and manage acquisition program consistent with the policies and procedures issued by the AAE and appropriate regulations, policies, procedures and standards.

b. Conduct a crosswalk, with the CBTDEV (TNGDEV for TADSS), of the ORD to the RFP to verify that the RFP, to include system specification or purchase description and the SOW, accurately reflects the operational requirements stated in the ORD for all programs. The MATDEV and CBTDEV (MATDEV and TNGDEV for TADSS) will formally certify that the RFP has been crosswalked with the ORD and is in agreement prior to the program review.

Chapter 3
Materiel System Requirements Documentation

3–1. Basis of materiel requirements

a. TRADOC will document and publish approved concepts. From these concepts, future operational capabilities (FOCs) will be developed. FOCs are generic statements of operational capabilities required by the Army to achieve the vision articulated in the TRADOC-approved concepts and to maintain military dominance over the operational environment in which it is expected to operate. The FOCs are the focus of continuing ICT analysis and experimentation to determine DTLOMS solutions.

b. If the ICT identifies a potential materiel solution, a MNS will be prepared in accordance with DoD Regulation 5000.2R and CJCSI 3170.01 (MOP 77). The MNS will express current capabilities or opportunities to provide new capabilities in broad operational terms. MNSs will be prepared in accordance with MOP 77 format guidelines for those materiel operational requirements with ACAT I or IA program potential and other programs representing a new Army mission or a potential program using a significant leap-ahead technology.

c. Materiel solution operational requirements will be documented in an ORD which is a formatted statement containing operational effectiveness, suitability, and related operational parameters for the proposed concept or system. It is prepared in accordance with DoD Regulation 5000.2R and paragraph 3-2 below. This broad statement will be refined and finalized to a firm set of requirements for MS II. Revision of the requirement between MS II and III should be the exception. Identify recommended KPPs in the ORD to appropriately focus the acquisition effort and decision making. DoD Regulation 5000.2R ORD format will apply. The ORD will reference applicable approved TRADOC FOC.

d. Field commanders and CINCs will identify urgent operational needs which jeopardize soldiers' lives or mission accomplishment in an ONS. The ONS will be forwarded to DA ODCSOPS. ODCSOPS in coordination with AMC and TRADOC will determine whether to support and take immediate action to satisfy the urgent need. If the operational capability described in the ONS cannot be immediately resolved, the ONS will be forwarded to TRADOC for action.

3–2. ORD

a. Each concept proposed at MS I will be described in an initial ORD in terms of minimum acceptable requirements (thresholds) that define the system capabilities needed to satisfy a MNS. When appropriate, objectives for each parameter representing a measurable, beneficial increment in operational capability or operations and support will be established. Objectives should not be stated if they cannot be supported with operational rationale. Objectives will not be arbitrarily created to stimulate the tradeoff process.

b. ACAT ID and IAM ORDs are approved by the JROC unless previously delegated. All other Army-generated ORDs are approved by the CG, TRADOC.

c. Update and expand the ORD for MS II to include thresholds and objectives for more detailed and refined performance capabilities and characteristics based on the results of tradeoff studies and testing conducted during Phase I. After MS II, only modify the ORD when there is a change in the mission need or the CBTDEV/TNGDEV determines a need to significantly change the performance envelope represented by the ORD minimum acceptable value (threshold) requirements.

d. The MATDEV will use the ORD to develop system performance requirements for contract specifications during each acquisition phase.

e. Unless the requirements approval authority specifically directs otherwise, an ORD is not needed for the following:

(1) Development and or procurement of a system for which there is another valid, approved requirements document, which was used to move the program through MS II, or equivalent, prior to August 1991. These documents include:

(a) Joint Service operational requirements (JSOR),

(b) Training device requirements (TDR).

(c) Required operational capability (ROC)

(d) Qualitative construction requirements (QCR) (Office of COE).

(e) Quick reaction capabilities (QRC) (AR 700-9, for unconventional warfare, psychological operations, special intelligence activities, and special warfare programs).

(f) Other Service requirements documents to include the RFP or system specification under which other service equipment, with a national stock number (NSN), was purchased.

(g) System specification when procurement is an equipment rebuy.

(2) With the exception of TADSS, procurement of items exempt from type classification (AR 70-1).

(3) Modifications to type classified standard equipment that will increase the operational capability to that already defined within an

approved ORD or other requirement document, that is, movement from a lower to a higher level of a banded requirement.

(4) Preplanned product improvements (P3Is) already documented in an approved ORD or other requirement document.

(5) Directed requirement documented by HQDA.

(6) Base operations materiel except training devices used to develop and maintain warfighter support skills, simulators and simulations for operations planning and rehearsal, and IT which provide interface to deployed units performing mission operations. Nondeployable and base operations IT products which interface with deployed units and considered to be ACAT III with expenditure less than $10 million in a single year, total program or a total life cycle cost do not require an ORD. MACOM information management offices must review the requirements and ensure architecture compliance. CDR,TRADOC may change these guidelines as needed based on approval processing experience.

f. The CBTDEV/TNGDEV will provide the MATDEV a user functional description in addition to the ORD to specify detailed information about operational requirements for automated capabilities in a specific IT system.

g. The ORD will describe the materiel item or system in operational terms. It will not present the technical requirement which is the purpose of the MATDEVs purchase description or specification. The minimum acceptable value (threshold) requirements will be truly essential and minimum needs for successful operations and not desires or artificial contract or acquisition values. The MATDEV translates the ORD values to RFP technical specifications. The evaluator evaluates the system and determines achievement of threshold requirements. Decision makers determine readiness to proceed considering these achievements and other information. ORD and its rationale provide a credible audit trail explaining the operational significance of each minimum requirement.

h. Field warfighting systems which satisfy required FOCs in the shortest amount of time by structuring requirements documents to rely on proven, available technologies for the immediate and short-term while providing for long-term growth.

(1) Specify in all ORDs at least two levels of performance characteristics, minimum acceptable value (threshold) requirement and objective requirement (DoD Regulation 5000.2R and CJCSI 3170.01). Provide objective requirement for parameters only when the CBTDEV/TNGDEV desire a relevant and operationally significant capability above the threshold requirement.

(2) Program P3I to achieve the objective system and to enable growth in the far term (8-12 years) by taking advantage of technology growth. State these in ORDs where there is a growth potential beyond immediate or short-term characteristics.

(3) Identify recommended KPPs in the ORD to appropriately focus the acquisition effort and decision making.

i. Adjust only after the CBTDEV or TNGDEV, as appropriate, and the MATDEV agree that such changes are necessary to authorize development of the system or TADSS to the required capability. ORD format and content is in DoD Regulation 5000.2R.

3–3. Capstone requirements documents (CRDs)

CRDs can be a combination of two or more MNS/ORDs/programs, which, when considered together form a system-of-systems. The CRD identifies systems requirements to define a mission area and serves as a guide for ORD development. The CRD is the bridge between the MNS and program ORDs. It is appropriate when a mission area requires more than one ORD and provides guidance to support ORD development. The CRD should be developed after the system MNS is validated and prior to MS 0. The CRD may identify common requirements that must be included in all program ORDs. Approval authorities may add or delete KPPs to ensure program ORDs are consistent with the CRD. The CRD is not an ORD and is not intended to be testable. It is a living document that reflects changes in threat or technologies.

3–4. ONS

a. Operational field commanders use an ONS to document the urgent need for a materiel solution to correct a deficiency or to improve a capability that impacts upon mission accomplishment. The ONS provides an opportunity to the field commander, outside of the acquisition and combat development and training development communities, to initiate the requirements determination process. The ONS is not a materiel requirements document. The CBTDEV, TNGDEV or MATDEV communities will not initiate or develop an ONS. DCSOPS will return ONS submitted by the CBTDEV, TNGDEV or MATDEV communities without action.

b. Response to an ONS varies depending on the criticality of the need for the proposed item. Response can range from a HQDA directed requirement and fielding of a materiel system to the forwarding of the action to TRADOC for review and routine action. HQDA may decline to favorably consider an ONS based on a variety of reasons, including conflicting needs, higher priorities for funding, existence of a similar system, or nonconcurrence of the criticality of the need. The response to an ONS will be based on an ARSTAF validation supported by TRADOC, AMC, and MATDEV reviews

c. ODCSOPS will determine validity of the need, availability of technology, and source of resources to fill this requirement. If the need is determined to be urgent, critical, and can be resourced (at least for the present situation) a directed requirement may result. If no solution is available or if the need is not urgent or critical the ONS will be turned over to CBTDEVs/TNGDEVs and MATDEVs to find solution. All ONS will be reviewed by the CBTDEVS/TNGDEV to determine applicability to future requirements or continuing need for which a standard requirement (ORD) and acquisition is needed.

d. ONS processing—

(1) Submit through the field commander's chain of command, in memorandum form, to any general officer, who can then submit it directly to HQDA (DAMO-FDJ) for consideration, with an information copy to HQ, TRADOC (ATCD-R) and HQ, AMC (AMCRDA) in the format at appendix B.

(2) Describe the operational critical need being addressed and the essential operational characteristics desired. Include, if appropriate, a proposed materiel solution, such as description of an item available for local procurement or found in another Service.

(3) ODCSOPS will staff within HQDA and provide at least an interim response to the sender within 120 days of receipt.

(4) Use, in general, when equipment alternatives are NDI, foreign or domestic, requiring minimal or no modification. Do not use an ONS for distribution/redistribution issues.

(5) Processing does not assure resourcing of equipment proposals. Proposals must still compete in the Army prioritization process to be programmed and funded unless proposal includes MACOM funding.

(6) Do not use for development and/or procurement of a system for which there is another valid, approved requirements document.

e. If validation of the ONS indicates that the concept has potential for Army-wide application and development of a new system is appropriate, TRADOC will initiate a MNS and/or ORD as appropriate.

f. If validation indicates that there exists a specific limited but necessary critical need, HQDA may issue a directed requirement for ONS having Army-wide application; however, tailored development and standard documentation will be used in this instance.

g. The ONS process may shorten NDI acquisition by shortcutting the requirements determination process en route to a buy decision; however; the ONS is more important to users because it starts the requirements determination process moving in the absence of any other impetus.

3–5. Operational requirement statement for rapid acquisition.

a. A streamlined operational requirement statement is appropriate documentation for WRAP candidates selected for rapid acquisition if a TRADOC FOC list can support materiel requirement traceability. The operational requirement statement for rapid acquisition is not a requirements document.

b. This requirement statement will be prepared in the format at appendix C.

c. WRAP is discussed in chapter 5.

3–6. Other Service requirements.

The CBTDEV/TNGDEV will review other Service warfighting capability requirements documents for potential Army interest. When the Army chooses to participate in the RDA of another Service program, HQDA will initiate action to validate and approve the documentation. When another Service requirement document, to include an approved production RFP, adequately describes an Army requirement, the document may be approved as the Army requirement, that is, an ORD. The Army may also acquire other Service equipment with an NSN that has been identified through the MATDEV market investigation and meets an approved Army need. The CBTDEV/TNGDEV will forward a letter to the appropriate approval authority identifying the NSN, an economic analysis and or a life-cycle cost assessment (when there is one), and other Service requirement document (if there is no NSN) for approval as the Army requirement. After approval the CBTDEV/TNGDEV will publish the package. HQ, TRADOC will serve to link Army CBTDEV/TNGDEV with the other Services for staffing of requirements. For joint programs, requirements documents will be prepared and processed in accordance the lead services procedures. Service peculiar requirements may be documented in the other Service's ORDs and other requirement document.

3–7. TADSS requirements

a. The TNGDEV has the lead responsibility for developing TADSS. TADSS are acquired under two categories: as a system training device (STD) or as a nonsystem training device (NSTD). The primary distinction between the two categories is the materiel requirements documentation and funding responsibilities associated with each.

(1) System TADSS are acquired to support the fielding of a specific system. TADSS requirements are documented in the ORD. If a system TADSS requirement is not identified until after the system has passed MS II, the requirement will be documented in a stand-alone, separate ORD. In either case, the activity responsible for the materiel system's acquisition is also responsible for funding and acquisition of the system's TADSS.

(2) All NSTD requirements will be documented in separate ORDs. Funding for NSTD is programmed and budgeted within the Army's training mission area (TMA).

(3) The Army's goal is to procure system TADSS as part of the total system package and terminate TMA funding of TADSS that support a system or family of systems.

b. Modification of any TADSS (hardware, software) necessitated by changes to the system supported will be accomplished and funded through the system's product improvement (PI) or block improvement program.

c. TADSSs have same requirements documentation requirements and approval authorities as other materiel programs. ACAT I, IA, and ACAT II through IV applies.

3–8. Certifications

All MNSs and ORDs will be staffed, as appropriate, with the following activities for the functional certification.

a. All documents for needs or systems that have C4/C4I interoperability and or interface requirements with other systems must be certified by J6/Defense Information Systems Agency (DISA) for architectural compliance prior to final approval. Waiver requests and unresolved issues for this category will be handled by J6 and the Military Communications Electronics Board (MCEB).

b. All documents for aviation and Class V (munitions) items will be staffed with J-X for cross Service interoperability. In addition, Class V items will be certified for conformance to insensitive munitions standards. Waivers requests and unresolved issues for this category will be handled by the JROC and J8 regardless of ACAT level.

c. Intelligence information for all ACAT I needs or systems must have a threat validation from the DIA. DIA will also evaluate open systems architecture, interoperability and comparability standards for all intelligence handling and information systems for all categories of MNSs and ORDs, and will assist J6 in assessing tactical SIGINT concerns in systems

3–9. Transition of requirements documents

a. Approved warfighting requirements documents remain in effect until the program is terminated, the system is phased out of the inventory (type classified obsolete), or as directed by HQDA.

b. Prepare requirements documents to support a milestone decision and to supersede a current requirement document in the formats prescribed by this regulation.

c. Requirements documents that have been initiated prior to implementation of this regulation are valid; do not withdraw or rewrite them to satisfy this regulation unless directed to do so by HQDA or HQ, TRADOC.

d. Technological advances, threat changes, or the direction of higher authority may require changes to approved requirements documents. Submit recommended changes to any approved materiel requirements document to the approval authority utilizing DA Form 2028 format. After approval, HQ, TRADOC will incorporate the changes into the original document and republish it as a revision in its entirety. Revisions will be numbered and an effective date will be established in accordance with CARDS procedures.

3–10. Approval authority for requirements documents

Approval for new requirements documents and changes to existing requirements documents will not be delegated below the rank of general officer or equivalent civilian. Recommended changes to an approved document will be validated and approved. CG, TRADOC is the approval authority for all Army warfighting requirements.

3–11. CARDS

a. CARDS is an unclassified DCSOPS publication that provides information on the status of approved requirements documents. It includes both active and inactive documents. An active document or assignment of a CARDS reference number does not automatically authorize the expenditure of funds. Each program must compete for funds in the Army prioritization and programming process.

b. ODCSOPS in coordination with the CBTDEVs, TNGDEVs, and MATDEVs will conduct an annual update of the CARDS.

c. ODCSOPS will assign a CARDS reference number to each requirements document after approval and prior to publication and distribution. Use CARDS to identify any revision to an approved document by revision date and number.

d. HQ, TRADOC will obtain the CARDS number from ODCSOPS after approval of requirement documents.

e. Approved requirements documents remain active until the program is terminated, the requirement is withdrawn, the document is superseded by a follow-on requirement document, the program is unfunded for one POM cycle (2 years), or the system is type classified obsolete.

Chapter 4
Joint Requirements Oversight Council (JROC)

4–1. The JROC is an instrument of the Chairman of the Joint Chiefs of Staff (CJCS) and the Secretary of Defense.

a. Mission. The JROC—

(1) Assesses requirements for defense acquisition programs.

(2) Represents the commanders of combatant commands on operational requirements.

(3) Assesses warfighting capabilities.

(4) Assigns a joint priority among major programs meeting valid requirements identified by the CINCs, Services, and others.

(5) Reviews all warfighting deficiencies that may necessitate major defense acquisition programs and validate the need for a material solution to the deficiency.

(6) Identifies, evaluates, and designates potential candidates for joint acquisition programs.

(7) Resolves cross-Service requirement issues.

(8) Reviews military needs and acquisition programs with emphasis on ensuring interoperability, pursuing opportunities for joint or multi-Service applications, eliminating unnecessary duplication, and promoting cost savings.

(9) Assists the Vice Chairman of the Joint Chiefs of Staff (JCS) in the role of Vice Chairman of the Defense Acquisition Board (DAB).

b. Functions. The JROC—

(1) Oversees the JWCA process.

(2) Oversees the requirements generation process and mission need determination.

(3) Reviews the results of concept exploration studies and provides recommendations on alternatives and cost-performance tradeoffs to the Under Secretary of Defense for Acquisition and Technology (USD(A&T)) prior to MS I review.

(4) Directs the review and designation of all MNS and resulting operational requirements for joint potential.

(5) Conducts program reviews between formal milestone decisions as required to ensure system performance meets original mission needs and evolving requirements.

(6) Assists the CJCS in ensuring alternatives to major defense programs have been considered.

(7) Charters and tasks study groups to address operational concept definitions, joint potential, and joint requirement issues.

c. Army's Role. The Vice Chief of Staff (VCSA) is the Army's permanent member of JROC. He or she ensures that major Army programs are scheduled and reviewed by the JROC as required. The VCSA represents both the Army's and CINCs interests in those areas where programs impact the successful accomplishment of the Army's strategic, operational, and tactical missions.

4–2. JROC Review Board (JRB) was created to assist the JROC with its increased role and responsibilities.

a. Functions. The JRB—

(1) Assists the JROC in overseeing the requirements generation process to include mission need determination, ORDs, and KPP validation.

(2) Assists the JROC in overseeing the JWCA.

(3) Reviews JWCA insights, findings, and recommendations, and provides guidance, suggestions, and direction prior to JROC final review.

b. Army's Role. The Assistant Deputy Chief of Staff for Operations and Plans-Force Development (ADCSOPS-FD) is the Army's permanent member of the JRB. He or she will ensure that major Army programs are scheduled and reviewed by the JROC as required. The ADCSOPS-FD represents both the Army's and CINCs' interests in those areas where programs impact the successful accomplishment of the Army's strategic, operational, and tactical missions.

4–3. JWCA

a. Functions. The JWCA are continuous assessments conducted by teams of warfighting and functional area experts from the Joint Staff, CINCs, Services, OSD, Defense Agencies, and others as required. The JWCA teams examine key relationships and interactions among joint warfighting capabilities and identify opportunities for improving effectiveness. The JWCA findings and recommendations are presented to the JROC for its consideration following review by the JRB. The JROC uses this process to forge consensus and explore new alternatives through extensive, open, and candid assessments of joint warfighting capabilities and requirements. The CJCS takes from the JWCA process and the JROC, as well as inputs from the JCS and the CINCs, to fulfill his or her statutory responsibilities to advise the Secretary of Defense on program recommendations and budget proposals. JWCA products and recommendations are used to assist the CJCS in development of the Chairman's Program Recommendations (CPR) and the Chairman's Program Assessment (CPA) which provide the statutory advice to the Secretary of Defense.

b. Army's role.

(1) The DCSOPS has responsibility for the overall Army support of the JROC/ JWCA process. The Army will provide membership to the JWCA assessment teams. The Army will conduct both internal ARSTAF coordination and external liaison and integration with the CINCs, Joint Staff, MACOMs, and component commands.

(2) The DCSOPS has designated the Requirements and Assessment Division of the Force Development Directorate (DAMO-FDJ) as the dedicated element to provide and coordinate required support for JROC/JWCA requirements. That element is the Army's advocate for JROC issues. The office of DAMO-FDJ is responsible for coordinating Army support both from within the ARSTAF and from outside functional experts for the assessment process or expanded study requirements.

c. A detailed discussion of JROC/JWCA process is in CJCSI 3137.01.

Chapter 5
Requirements Streamlining

5–1. General

The Army's requirements and modernization processes must be an efficient, effective, and flexible force coping with the rapid changing technology and socio-political environments to provide the warfighter timely, innovative solutions providing or maintaining the edge in all missions. HTI and WRAP are two combat developer/ training developer initiatives which provide a holistic approach to requirements determination; early enjoinment of the requirements, acquisition, and user communities in a team effort; aggressive exploitation of leading edge technologies; and an accelerated acquisition process for high payoff items.

Section I
Horizontal Technology Integration (HTI)

5–2. HTI Defined

HTI is the application of common technology solutions across multiple systems to improve the warfighting capability of the total force. It represents the holistic process of developing, integrating and fielding of common or multi-use technologies, hardware and software into different types of weapons and information systems that fight together as units or task forces.

5–3. HTI Strategy

a. The "across-the-force" development of requirements and accelerated acquisitions together with supporting acquisition strategies permit the Army to maximize use of limited modernization funds and better respond to rapidly changing world situations. HTI depends upon the use of ICTs for horizontal requirements integration and IPTs for program development and execution.

b. HTI efforts can be implemented in several ways. HTI programs and efforts cover a broad spectrum of modernization initiatives. At least four different and complementary approaches to HTI are as follows:

(1) The planning and execution of common S&T programs (for example technology demonstrations, ATDs and OSD level advanced concept technology demonstrations (ACTDs)) that are inherently designed to provide multi-role or multi-platform applications.

(2) Integrated concepts and system requirements that consolidate capabilities that cross related battlefield mission areas and functions.

(3) The integration of common components, sub-systems and or software into multiple weapon platforms or systems during development or follow-on product improvements, system block upgrades or P3I.

(4) The development of common electronic, technical, and operational architectures and common software modules with related applications across more than one system or function.

c. As a process, HTI supports an integrated battlefield architecture that exploits the capabilities of combat, materiel and training developers, national laboratories, industry and academia to achieve total force synergism. Its purpose is to provide increased modernization efficiency and responsiveness while enhancing overall force warfighting effectiveness. Fielding common subsystems reduces overall force logistical burden, operational and support (O&S) costs and allows more efficient use of manpower by concentrating critical skills towards one major effort as opposed to several. This also reduces the amount and expense for operational and technical testing that would otherwise be required during weapon system development.

5–4. HTI management and implementation

a. HTI will be implemented within the framework of existing acquisition processes, structures and organizations. The process complies with existing DoD Federal Acquisition Regulations (FARs), DoD acquisition regulations (DoD Directive 5000.1/DoD Regulation 5000.2R) and Army acquisition regulations (AR 70-1).

b. A HQDA general officer working group (GOWG) is the central authority for all formal Army HTI initiatives and programs. The GOWG is co-chaired by the ADCSOPS-FD and the ASA(RDA) Deputy for Systems Management. GOWG members include HQDA representatives from ODCSOPS, ASA(RDA), ASA(FM&C), DISC4, and PA&E, along with TRADOC, AMC, and OPTEC representatives. They establish the HTI "blueprint," synchronize and prioritize efforts, provide specific guidance, resolve issues, and provide general officer-level direction, guidance, and oversight. In addition, the ASA(RDA) Deputy for Systems Management acts as the Army HTI executive agent and determines, coordinates, and issues specific guidance for HTI programs implemented across multiple PEO/PM structures and organizations.

c. The HTI process begins with an operational concept, FOC, or system requirement. The appropriate management structure is then chartered to implement an HTI initiative through the application of specific programs. HTI initiatives will continue to follow established acquisition management procedures. The ASA(RDA) will ensure the technology insertion is completely synchronized through management oversight of the respective Army laboratory, Army research, development and engineering (RDE) center, PEOs and PMs. The individual HTI efforts are managed as a part of planned S&T objectives (STOs), new system developments, and or system modifications. This increased management focus will ensure that the technology development plan or weapon system acquisition strategies/plans are designed with an overall horizontal approach to development and execution. This should include possible joint service, allied nation or industry applications.

d. HTI initiatives will be resourced through individual MDEPs on a case by case basis. There will be an MDEP established to provide funding for both common, government-furnished hardware, and for the actual insertion and integration of the common hardware onto the designated weapon systems.

e. As the HTI process matures, the need to create centralized funding lines, specific charters and requirements documents, along with creating specific task forces or PM organizations, will be addressed. Some potential challenges or disadvantages to using an HTI acquisition approach is acknowledged. Realigning program schedules, changing technical approaches, and altering funding strategies in order to horizontally insert technology or implement product improvements could result in higher up-front costs. Major modifications of certain older generation systems may also be required for those systems to accept newer technology. Additionally, funding the technology insertion for several different systems must be consistent and executable. HTI needs to be a basic part of program development and planning. However, HTI principles should be applied only where it makes sense for total force efficiency and effectiveness.

f. AR 70-1 provides more detailed information on HTI planning and execution.

Section II
WRAP

5–5. WRAP Defined.

The WRAP is directed at accelerating procurement of systems identified through TRADOC warfighting experiments as compelling successes which satisfy an urgent need. It is implemented within existing Army structure. WRAP is compatible with and supports FAR and DoD and Army acquisition policy (DoD 5000 series and AR 70 series). WRAP applies to AWEs, CEPs, ATDs, ACTDs and similar experiments where TRADOC ICT supported by a TRADOC battle lab are directly involved. Approved programs may be funded as prototype for 2 years. Immediate funding is not guaranteed. Continued actions will be needed to fully document system obtain "Standard" type classification and full logistics support.

5–6. The WRAP Process.

a. A streamlined operational requirement statement is appropriate documentation for WRAP candidates selected for rapid acquisition for successful Battle Lab experiments (AWE, CEP, ATD, ACTD) finding a high payoff solution to an urgent current/short term future need. CG, TRADOC, requests the ASA(RDA) convene a WRAP ASARC and submits identified compelling success systems which have urgent requirements to the WRAP ASARC for approval. WRAP ASARCs will normally be scheduled in the March-April and September-October timeframes, as a minimum, to accommodate PPBES actions. WRAP ASARCs can be held at other times if appropriate. AR 70-1 provides detail of membership. Candidates may be submitted to the WRAP ASARC at any time. The WRAP ASARC accomplishes the following:

(1) Review requirement and urgency.

(2) Review affordability.

(3) Review experimentation results.

(4) Approve an acquisition strategy (AS).

(5) Assign management responsibility to AMC advanced concepts manager (ACM) or designate PEO/PM.

(6) Assign a milestone entry point as appropriate.

(7) Approve a funding strategy.

b. MNS is normal document needed to support TRADOC AWEs. A MNS is not required if an FOC list can support the WRAP requirement traceability. For candidates selected for rapid acquisition, a streamlined operational requirement statement is sufficient to support the WRAP ASARC and for documentation during the 2 years before regular programming begins. Items not approved for rapid acquisition will convert to normal documentation over set time period.

5–7. WRAP Documentation.

An updated battle lab experimentation plan (BLEP) supplemented with other documentation and an operational requirement statement for rapid acquisition will be submitted to ODCSOPS (DAMO-FDJ) at least 45 days prior to the WRAP ASARC. CDR, TRADOC will approve package before submission to WRAP ASARC. Supplementary documentation for to the BLEP includes: urgency of need statement, experimentation results documenting compelling success, proposed acquisition strategy, and a budget estimate for the proposed program. The format for the operational requirement statement for rapid acquisition is provided in appendix C.

5–8. WRAP Transition

When the WRAP ASARC approves a candidate system, the approval will specify the level of documentation of the operational requirement needed, based upon the TRADOC recommendation, program status, potential future funding, and battlefield impact.

Chapter 6
Supporting Documentation and Considerations

6–1. Pre-MS 0—mission needs determination

The key materiel requirements determination activities during this phase, after operational concept and FOC approval, are determination that a materiel solution, in fact, applies, and subsequent preparation and approval of the MNS when applicable. Analyses and experimentation is conducted to confirm or eliminate all other potential doctrine, training, leader development, organizational solutions as well as other Service materiel related to this need. These efforts include assessments of known and approved programs; and technology opportunities such as, ATDs and ACTDs. This analysis must reflect a consolidated assessment of all mission needs including near-term, programmed and future capabilities needed to execute National Military Strategy (NMS). Needs must reflect strategic, operational, and tactical requirements related to the NMS. The analytical support for this integrated assessment should form the basis for the Army's rationale for defense acquisition MS 0 decisions.

6–2. Phase 0—concept exploration

The purpose of this phase is to determine if a new system is required and if so, document system characteristics and performance parameters, including cost. Key activities during this phase are development and approval of the initial ORD with proposed KPP and the development of the APB as well advise the MS I MDR principals on whether a new program is warranted. Key to this effort is the synchronization and linkage of the requirements tradeoff/operational analyses, concept studies, cost-schedule-performance tradeoffs and AoA. This linkage is mutually supportive of the CBTDEV-led ICT and subsequent MATDEV-led IPT to produce the APB as well as providing the MDR needed information.

a. Concept studies. The MATDEV, in coordination with the ICT, conducts concept studies to examine the feasibility of different technology solutions and to refine technology concepts. These studies develop rough performance estimates to permit first-cut, rough tradeoffs among system performance, operational capability, requirements and costs. These studies identify potential system concept alternatives and result in initial broad objectives for cost, schedule, performance, software, requirements, and opportunities for tradeoffs.

b. Requirements tradeoffs/operational analysis. Requirements tradeoffs and operational analysis are conducted by the ICT to support development of the initial ORD and decisions regarding which materiel alternative (for example, modified current system, program systems, NDI (conceptual)) should be pursued to satisfy the ORD. The initial ORD will include system performance thresholds and objectives that are consistent with initial broad statements of operational capability. The MATDEV conducts tradeoff analyses to support the ICT, to support the development of the APB, and provide the basis for initial cost targets provided to the MDA and CPIPT. These MATDEV analyses explore the relationships between the cost and performance of anticipated system characteristics.

c. AoA. The organization responsible for the mission area in which a deficiency or opportunity has been identified normally prepares an AoA. The AoA provides information to the decision authority at the MS I review to assist in determining whether any of proposed alternatives to an existing system offer sufficient military and or economic benefit to be worth the cost.

(1) The AoA focuses on broad operational capabilities, potential technology concepts, and materiel solutions that could satisfy the MNS. It examines the full range of materiel alternatives (including those identified in the MS 0 Acquisition Decision Memorandum (ADM)). AoAs illuminate the relative advantages and disadvantages of alternatives being considered by identifying sensitivities of each alternative to possible changes in key assumptions (for example, threat) or variables (for example, selected performance capabilities).

(2) The AoA provides insights regarding key performance parameters for preferred alternative(s) and indicates how these parameters contribute to increases in operational capability. It identifies opportunities for tradeoffs among performance, cost, and schedule; and determines operational effectiveness and costs (including estimates of training and logistics impacts) for all alternatives.

(3) If a new program is approved, the AoA may be useful for identifying alternatives that will be refined by cost performance tradeoff studies during Program Definition and Risk Reduction - Phase I. It should be useful for limiting the number of alternatives to be considered during Phase I.

(4) The MDA may direct updates to the AoA for subsequent decision points, if conditions warrant, for example, AoA may be useful for examining cost-performance tradeoffs at MS II.

6–3. Phase I—program definition and risk reduction

Key activities during this phase are the finalization of the ORD and KPPs, the APB and performance data, system RDA life cycle cost estimates, and O&S life cycle cost estimates. The PM-led CPIPT conducts the cost performance-schedule tradeoff analysis to explore in detail the relationships between cost and performance, to identify cost drivers for alternative system characteristics, and to identify costs and risks of alternative schedules. These analyses support ICT tradeoff analyses leading to finalization of the ORD.

6–4. System Threat Assessment Report (STAR)

a. The STAR is the basic authoritative threat assessment that supports the development and acquisition of a particular ACAT I or II system. The STAR contains an integrated assessment of projected enemy capabilities (doctrine, tactics, hardware, organization and forces) at initial operational capability (IOC) and IOC plus 10 years, to limit, neutralize or destroy the system. It will explicitly identify CICs which are a series of threat capabilities, or thresholds established by the program which could critically impact the effectiveness and survivability of the program. The STAR is a dynamic document that will be continually updated and refined as a program develops. It will be approved and validated in support of ASARC/DAB review. A system threat assessment (STA) supports ACAT III and IV systems and is prepared in STAR format.

b. This report will be the primary threat reference for the ORD, the integrated program summary (IPS) or single acquisition management plan (ACAT ID), the AoA, and the test and evaluation master plan (TEMP) developed in support of a MDR.

c. The STAR will be—

(1) Approved by DCSINT and validated by the DIA for all ACAT I programs at MS I and updated for all ACAT ID programs at MS II and MS III.

(2) Prepared for DCSINT review and approval for ACAT II and III programs, to include highly sensitive classified programs unless specifically waived by the MDA.

6–5. Environmental impact

a. DoD pollution prevention policy requires that in designing, manufacturing, testing, operating, maintaining, and disposing of systems, all forms of pollution shall be prevented or reduced at the source whenever feasible.

b. It is the joint responsibility of the CBTDEV and MATDEV to ensure programs are conducted in accordance with applicable federal, State, interstate, and local environmental laws and regulations, executive orders, treaties, agreements, and DoD/Army policy. Principal among these are the National Environmental Policy Act, Executive Order 12856, the Resource Conservation and Recovery Act, the Pollution Prevention Act, the Clean Air Act, and the Clean Water Act.

c. Requirements documents must be reviewed to ensure use of pollutants and toxic chemicals is reduced whenever possible, or that plans for battlefield disposal of contaminants as well as systems disposal needs are addressed. Additional details of environmental requirements are contained in DoD Regulation 5000.2R, AR 70-1, AR 200-1, and AR 200-2.

6–6. Ammunition requirements

Requirements documents that identify a need for weapons and other

related materiel must have JCS (J4) certification of insensitive munitions and will include provisions for the following:

a. Efficient, rapid rearming and resupply of ammunition.

b. Special range requirements to include targetry and instrumentation for home station and the CTCs.

c. Training unique ammunition, dummy, drill, and inert munitions, and subcaliber devices/ammunition as required by the system TADSS documentation.

d. Render safe procedures.

e. Stockage, crating, and packaging for ammunitions that—

(1) Meets the requirements of AR 70-38, 700-15, 746-1, and Military Standard (MILSTD) 1660.

(2) Permits rapid access to clean rounds in palletized and individual configuration without special tools or special handling equipment during combat or during extreme climatic conditions.

(3) Provides protection from NBC, petroleum, oils, and lubricants (POL), and other contaminants.

(4) Does not contribute to vulnerability of ammunition to fire or explosion, minimizes battlefield litter and signature.

(5) Is capable of surveillance inspection without compromising afforded protection.

(6) Is manportable and smallest, lightest package possible.

6–7. Transportability and containerization requirements

a. CBTDEV, TNGDEV, and MATDEV will ensure that air drop and air transportability are considered during preparation of requirements documents (AR 70-47). Tradeoffs between transportability and combat effectiveness may be appropriate.

b. Details must include—

(1) Configuration (such as fully operational or partially disassembled).

(2) Delivery technique (standard airdrop, container delivery system (CDS) bundles, and on the individual parachute).

(3) Containerization requirements must be identified and considered when writing the required and during the development process as outlined in AR 70-47.

(4) External and internal air transportability requirements must be outlined by type aircraft.

(5) Provisions to accommodate both the soldier-operator's basic load and materials essential to support operating the system/equipment.

c. Army Engineering for Transportability program provides the MATDEV, CBTDEV, and TNGDEV guidance and procedures for use during the materiel acquisition process. These procedures assure that systems, equipment, and munitions, including spare parts, are designed, engineered, and constructed so that required quantities can be moved efficiently and economically by existing and planned transportation assets.

d. Unit strategic mobility constraints should be stated in the constraints paragraph of the requirements documents if applicable.

6–8. Electromagnetic environmental effects (E3)

a. E3 defines a broad area of diverse phenomena caused by electromagnetic radiation from threat, friendly, and or natural sources. E3 deals with processes by which acquisition personnel specify, design, test, evaluate, field, and maintain systems to accomplish their intended missions in the expected electromagnetic environments of peace and war.

b. Determination of probable system E3 limitations enables the acquisition team to make informed judgments and tradeoffs supporting system design and modifications decisions. The E3 program includes effects of threat and nonhostile (fratricidal) emitters, or unintentional (collateral) effects caused by hostile emitters.

c. CBTDEV, TNGDEV, and MATDEV will ensure that systems, TADSS, and embedded training will perform at specified acceptable levels of operability when faced with projected CM threat during the baseline threat period (IOC to IOC plus 10 years). Battlefield systems will be hardened from the E3 associated with battlefield environments in sufficient detail to preclude mission failure in the defined operating environment.

6–9. Survivability requirements

a. DoD Regulation 5000.2R requires that survivability against the full spectrum of battlefield threats found in the various levels of conflict be considered, in an integrated manner, in all systems acquisition programs. AR 70-75 requires that all mission essential/critical systems be nuclear, chemical and biological (NBC) contamination survivable and if the system contains electronic equipment, as a minimum, it will be survivable to high-altitude electromagnetic pulse (HEMP).

b. CBTDEVs will ensure that the threat and operational environment stated in the MNS guides preliminary survivability planning. The ORD will include survivability thresholds and objectives as part of the soldier and materiel survivability requirements. These include threats such as conventional ballistic, electronic warfare (EW), nuclear weapons effects, NBC contamination, and advanced threats such as directed energy along with counter-measures such as smoke and obscurants, or other HTI countermeasures. Further, requirements should address detection avoidance, hit avoidance, hit survivability, and reconstitution. Soldier survivability (SSv) is a domain of MANPRINT and may also be specifically attended to within the Human systems Integration (HSI) section of the ORD.

6–10. Test, measurement, and diagnostic equipment (TMDE)

CBTDEVs and TNGDEVs must early-on identify and document requirements for TMDE (built-in test, manual and automatic) in line with the Army's standardization policies and objectives. Those policies and objectives are aimed at controlling the proliferation of system-specific test equipment, reducing operating and support costs, and providing modern and technologically-capable equipment to support a wide range of Army test and diagnostic requirements. AR 750-43 provides guidance on determination of and formulation of requirements documents. It also outlines the process used for the selection of TMDE; reinforces the DoD 5000 series requirements for the use of standard automatic test equipment (the Army standard is The Integrated Family of Test Equipment) or COTS TMDE; and addresses a host other TMDE considerations and requirements.

6–11. Standardization and interoperability (S&I)

a. The CBTDEV and TNGDEV, while investigating concepts and especially during development of requirements documents, capture the opportunity to incorporate S&I philosophy so as to reduce cost and improve quality. Elimination of duplicative systems acquisition within the Army and the services must be of foremost consideration. Interoperability must be sought when complete standardization cannot be obtained.

b. Standardization is an important consideration throughout the acquisition process. Properly applied, standardization can significantly reduce life-cycle costs, schedules and risks, while improving quality and logistic support.

c. It is Army policy to use commercial products, practices and processes to the maximum extent possible. This strategy reduces unnecessary overhead and consequently reduces costs. In addition, it relies on the commercial marketplace as our industrial base. The hierarchy of preference is—

(1) Use of performance specifications.

(2) Use commercial item descriptions.

(3) Use non-Government (commercial) standards

d. CBTDEVs and TNGDEV that prepare requirements documents will insure that they comply with the National Disclosure policy before release of documents to foreign nationals, contractors and or foreign governments (AR 380-10).

e. Formulation of requirements documents must consider the need to comply with Army standardization policy regarding the use

of fuels and lubricants (AR 703-1), environmental control equipment (AR 700-115), mobile power generation equipment (AR 700-101), and batteries in new equipment.

f. Mobile electric power (MEP). Army generators and power units will be members of the DoD standard family. CBTDEV, TNGDEV, and MATDEV will immediately request assistance from TRADOC (CDR Combined Arms Support Command (CASCOM)) and PM MEP upon identifying a requirement for a generator or power unit as a stand-alone system or as a component of a system. See AR 700-101 for more details on MEP.

6–12. P3I

The provisions of P3I will be considered in all acquisition programs and documented in requirements documents as appropriate. The P3I is a strategy that allows for planned future evolutionary improvements of a system for which design considerations are accomplished during acquisition to enhance future applications of projected technologies. P3I includes improvements planned for ongoing systems that go beyond the current performance envelope to achieve a needed operational capability.

a. P3I documentation and roles—

(1) P3I requirements will be identified as such, included in the applicable paragraphs of the body of the ORD, and stated in minimum acceptable value (threshold) and when applicable objective value requirements. P3I is not the mechanism to achieve existing objective value requirements. Modifications for this purpose would compete on their own merits for resource savings. When an evolutionary approach with block modifications is being pursued, an annex to the ORD will be used to identify the capabilities required for each block. The individual P3I requirements will be in their respective ORD paragraphs.

(2) The CBTDEV/TNGDEV has the lead in preparing and getting the ORD approved including the P3I requirement before MS III. The PM/MATDEV are among several advisors to the CBTDEV/TNGDEV during this process but are principal advisor on matters of technology and program/schedule impact. Should the PM/MATDEV want to remove a P3I from the ORD and the CBTDEV agrees then a change to the ORD is required to be processed. If the CBTDEV disagrees because of continuing need, then P3I will normally remain in the ORD. A program review may be required if current effort being expended and needs termination or if there is unresolvable disagreement concerning the P3I. DCSOPS and the CBTDEV/TNGDEV set the operational priorities.

b. The two significant elements of P3I are—

(1) Accurate anticipation of future incremental improvements to the system/subsystem. The Army fully intends to develop the equipment to these requirements. The P3I capabilities are essential, just like the basic capabilities, and the PM must ultimately meet them in order to satisfy the warfighter's needs.

(2) The reduction of near-term system requirements and the addition of growth provisions to achieve full capability over time through phased block improvements. The Army needed these capabilities in the original product, but today's technology could not deliver them. The capabilities are essential to the warfighter, but the PM must have more time to get them through technology base activities and make them cost-effective.

c. The basic objectives of P3I are to —

(1) Shorten the acquisition and development time for materiel systems.

(2) Extend the useful life of a system.

(3) Reduce technical, cost, and schedule risk.

(4) Accommodate warfighter needed future technological advances foreseen at MS III in a timely and efficient manner.

d. The impacts on TADSS program resulting from P3I will be assessed by the MATDEV in coordination with the CBTDEV/TNGDEV and required changes to all TADSS will be planned for and resourced by the system MATDEV.

6–13. C4I

HQ, TRADOC will ensure the MNS and ORDs submitted by MACOMs and others are consistent with the OA. MACOMs will describe in their MNS and ORD the link to the OA as well as FOCs from the approved concepts published by CDR, TRADOC. MACOMs will supplement their previous OA submissions to HQ, TRADOC.

6–14. Reliability and maintainability (R&M)

An effective R&M program that focuses on achievement of operational requirements and O&S cost targets is necessary to ensure that user operational reliability requirements will be met. CBTDEVs and TNGDEVs will participate with MATDEVs in defining an effective, tailored R&M program for each system pursued. As a minimum, the CBTDEV/TNGDEV will provide an operational mode summary/mission profile (OMS/MP) and a failure definition and scoring criteria (FDSC) to support the reliability requirement. The OMS/MP and FDSC are necessary to support RFP development, T&E in an operational environment, definition of the trade space to balance cost and performance, and numerous other activities. Specific documentation, content, and method for providing this information is defined by the CBTDEV/TNGDEV but is coordinated with the MATDEV and independent evaluation organizations. The operational FDSC is to be used as the basis for all assessments of operational RM and is not to contain criticality factors or partial failure.

Appendix A
References

Section I
Required Publications

AR 70–1
Army Acquisition Policy (Cited in paras 1-4, 2-26, 3-2, 5-4, 5-6, and 6-5.)

CJCS Instruction 3137.01
The Joint Warfighting Capabilities Assessment Process (Cited in para 4-3.) Request from HQDA (DAMO-FDJ), 400 ARMY PENTAGON, WASH DC 20310-0400.

CJCS Instruction 3170.01
Memorandum of Policy (MOP) 77 - Requirements Generation System (Cited in paras 1-4, 3-1, and 3-2.) Request from HQDA (DAMO-FDJ).

DoD Directive 5000.1
Defense Acquisition (Cited in paras 1-4, 2-5, and 5-4.)

DoD Regulation 5000.2R
Mandatory Procedures Major Acquisition Programs (MDAPs) and Major Automated Information Systems (MAIS) Acquisition Programs (Cited in paras 1-4, 3-1, 3-2, 5-4, 6-5, and 6-9.)

Section II
Related Publications

A related publication is merely a source of additional information. The user does not have to read it to understand the regulation.

AR 1–1
Planning, Programming, Budgeting and Execution System

AR 5–4
Department of the Army Productivity Improvement Program

AR 11–18
The Cost and Economic Analysis Program

AR 15–41
Nuclear and Chemical Survivability Committee

AR 34–1
International Military Rationalization, Standardization and Interoperability

AR 40–5
Preventive Medicine

AR 40–10
Health Hazard Assessment Program in Support of the Army Materiel Acquisition Decision Process

AR 40–46
Control of Health Hazards from Lasers and Other High Intensity Optical Sources

AR 40–60
Policies and Procedures for the Acquisition of Medical Materiel

AR 70–6
Management of the Research, Development, Test, and Evaluation Army Appropriation

AR 70–8
Soldier-Oriented Research and Development Personnel and Training Program

AR 70–9
Army Research Information Systems and Report

AR 70–14
Publication and Reprints of Articles in Professional Journals

AR 70–25
Use of Volunteers as Subjects of Research

AR 70–31
Standards for Technical Reporting

AR 70–38
Research, Development, Test, and Evaluation of Materiel for Extreme Climatic Conditions

AR 70–45
Scientific and Technical Information Program

AR 70–47
Engineering for Transportability

AR 70–57
Military-Civilian Technology Transfer

AR 70–75
Survivability of Army Personnel and Materiel

AR 73–1
Test and Evaluation Policy

AR 75–15
Responsibilities and Procedures for Explosive Ordnance Disposal

AR 200–1
Environmental Protection and Enhancement

AR 200–2
Environmental Effects of Army Actions

AR 350–38
Training Device Policies and Management

AR 380–5
Department of the Army Information Security Program

AR 380–10
Department of the Army Policy for Disclosure of Military Information to Foreign Governments

AR 380–381
(C) Special Access Programs (U)

AR 530–1
Operations Security (OPSEC)

AR 602–1
Human Factors Engineering Program

AR 602–2
Manpower and Personnel Integration (MANPRINT) in the System Acquisition Process

AR 700–9
Policies of the Army Logistics System

AR 700–15
Packaging of Materiel

AR 700–47
Defense Standardization and Specification Program

AR 700–60
Department of Defense Parts Control Program

AR 700–70
Application of Specifications, Standards, and Related Documents in the Acquisition Process

AR 700–86
Life-cycle Management of Clothing and Individual Equipment

AR 700–90
Army Industrial Base Program

AR 700–101
Joint Operating Procedures: Management and Standardization of Mobile Electric Power Generating Sources

AR 700–127
Integrated Logistics Support

AR 700–129
Management and Execution of the Integrated Logistics Support Program for Multiservice Acquisitions

AR 702–3
Army Materiel Systems Reliability, Availability, and Maintainability (RAM)

AR 702–6
Ammunition Stockpile Reliability Program (ASRP) and Nuclear Weapons Stockpile Reliability Program (ANWSRP)

AR 702–11
Army Quality Program

AR 703–1
Coal and Petroleum Products Supply and Management Activities

AR 705–24
Management of Test and Test Support Aircraft

AR 710–2
Inventory Management Supply Policy Below the Wholesale Level

AR 735–5
Policies and Procedures for Property Accountability

AR 746–1
Packaging of Army Materiel for Shipment and Storage

AR 750–1
Army Materiel Maintenance Policy and Retail Maintenance Operations

AR 750–43
Army Test, Measurement, and Diagnostic Equipment Program

DA Pam 70–21
The Coordinated Test Program (CTP)

DoD 7110.1M
DoD Budget Guidance Manual

DoDD 3224.3
Physical Security Equipment Assignment of Responsibility for Research, Development, Testing, Procurement, Evaluation, Production, Deployment, and Support

DoD Directive 4630.5
Compatibility, Interoperability, and Integration of Command, control, Communications, and Intelligence (C3I) Systems

DoD Directive 5000.37
Acquisition and Distribution of Commercial Products (ADCP)

DoDI 4630.8
Procedures for Compatibility, Interoperability, and Integration of Command, Control, Communications, and Intelligence (C3I) Systems

MIL–STD 882–C
System Safety Program Requirements

SB 700–20
Army Adopted/Other Items Selected for Authorization/List of Reportable Items

NSA/CSS Cir 25–51
Systems (Acquisition Management)

Section III
Prescribed Forms
This section contains no entries.

Section IV
Referenced Forms
This section contains no entries.

Appendix B
Operational Needs Statement (ONS) Format
The ONS should be limited to three pages. It may include descriptive back-up data if desired.

1. PROBLEM
Clearly define the deficiency or area to be improved. State what cannot be done now that the materiel solution proposed will fix. State what will be improved through the use of the system.

2. JUSTIFICATION
Reason for urgency; impact of not having the system.

3. SYSTEM CHARACTERISTICS
To identify pertinent operational, physical and logistical requirements.

4. OPERATIONAL CONCEPT
State how will the system be employed. Note if it will it replace any current item of equipment.

5. ORGANIZATIONAL CONCEPT
State who will employ the system and at what organizational level.

6. PROCUREMENT OBJECTIVE
State whether the system is to meet an operational requirement or is it for evaluation purposes only.

7. SUPPORT REQUIREMENTS
List the associated items of equipment envisioned.

8. AVAILABILITY
If known, indicate whether commercial or other Service equipment, foreign or domestic, is available for off-the-shelf procurement.

9. RECOMMENDATION
Recommend course of action to resolve problem.

Appendix C
Operational Requirements Statement for Rapid Acquisition Format

Use the following format when developing an operational requirements statement for rapid acquisition—

a. Defense planning guidance (DPG)—annotate supporting paragraphs from latest DPG.

b. Threat—address all threats to system and their effects on mission accomplishment/performance. Include reference to applicable FOCs.

c. System requirement—in operational terms address what the system is expected to do: KPPs, other requirements, objective future requirements (potential growth or new technology).

d. Constraints (if necessary)—specify any parameters that could limit system capabilities.

Glossary

Section I
Abbreviations

AMC
Army Materiel Command

ARNG
Army National Guard

ASARC
Army Systems Acquisition Review Council

ASA(RDA)
Assistant Secretary of the Army (Research, Development and Acquisition)

CCH
Chief of Chaplains

CDR
Commander

CG
commanding general

CINC
Commander in Chief

CJCS
Chairman of the Joint Chiefs of Staff

COE
Chief of Engineers

CSA
Chief of Staff, U.S. Army

DA
Department of the Army

DCI
Director, Central Intelligence

DCSLOG
Deputy Chief of Staff for Logistics

DCSOPS
Deputy Chief of Staff for Operations and Plans

DCSPER
Deputy Chief of Staff for Personnel

DIA
Defense Intelligence Agency

DoD
Department of Defense

DoDD
Department of Defense Directive

DoDI
Department of Defense Instruction

EW
electronic warfare

HQ
headquarters

HQDA
Headquarters, Department of the Army

ILS
integrated logistic support

INSCOM
U.S. Army Intelligence and Security Command

IOC
initial operational capability

JCS
Joint Chiefs of Staff

MACOM
major Army command

MTMC
Military Traffic Management Command

MTOE
modification table of organization and equipment

NBC
nuclear, biological and chemical

NET
new equipment training

NSA
National Security Agency

NSN
national stock number

ODCSOPS
Office of the Deputy Chief of Staff for Operations and Plans

OSD
Office of the Secretary of Defense

PM
project manager, program manager, or product manager

POL
petroleum, oils, and lubricants

POM
program objective memorandum

R&D
research and development

RDTE
research, development, test and evaluation

ROC
required operational capability

SA
Secretary of the Army or systems architecture

SIGINT
signal intelligence

TDA
tables of distribution and allowances

TJAG
The Judge Advocate General

TMDE
test, measurement and diagnostic equipment

TRADOC
U.S. Army Training and Doctrine Command

TSG
The Surgeon General

USAR
U.S. Army Reserve

Section II
Terms

Acquisition Phase
Phases provide a logical means of progressively translating broadly stated mission needs into well defined system-specific requirements and ultimately into operationally effective, suitable, and survivable systems. All the tasks and activities needed to bring the program to the next MS occur during acquisition phases.

Acquisition Program
A directed, funded effort designed to provide a new, improved or continuing weapons system or AIS capability in response to a validated operational need. Acquisition programs are divided into different categories which are established to facilitate decentralized decision-making, and execution and compliance with statutory requirements.

Acquisition Strategy (AS)
The AS documents the appropriate planning process and provides a comprehensive approach for achieving goals established in materiel requirements. It serves as a principal long-range document, charting the course of a major acquisition program over its life-cycle.

Army Acquisition Executive (AAE)
Senior acquisition executive responsible for administering acquisition programs in accordance with established policies and guidelines. The AAE is also the senior procurement executive.

Army Systems Acquisition Review Council (ASARC)
Top level DA review body for ACAT I and ACAT II programs. Convened at formal milestone reviews or other program reviews to provide information and develop recommendations for decision by the AAE.

Automated Information System (AIS)
A combination of computer hardware and software, data, or telecommunications, that

performs functions such as collecting, processing, transmitting, and displaying information. Excluded are computer resources, both hardware and software, that are: physically part of, dedicated to, or essential in real time to the mission performance of weapon systems.

Chief Information Officer (CIO) Validation
A representative of the DISC4 (the Army CIO) participates in the requirements determination process as a member of the ICT, and later the IPT, and validates requirements against business process reengineering, compliance with the Army Technical Architecture (ATA), and ensures they are in compliance with emerging C4I technologies.

Combat developer (CBTDEV)
Command or agency that formulates and documents operational concepts, doctrine, organizations, and or materiel requirements (MNS and ORDs) for assigned mission areas and functions. Serves as the user representative during acquisitions for their approved materiel requirements as well as doctrine and organization developments.

Combat development
The process of analyzing, determining, and prioritizing Army requirements for, doctrine, training, leader development, organizations, soldier development, and equipment and executing or (in the case of doctrine, training and materiel, initiating) solutions, within the context of the force development process.

Integrated concept team (ICT)
An integrated team made up of people from multiple disciplines formed for the purposes of developing operational concepts, developing materiel requirements documents, developing other DTLOMS requirements documents, when desired, and resolving other requirements determination issues.

Initial operational capability (IOC)
The IOC is the first attainment of the capability by an MTOE unit and supporting elements to operate and maintain effectively a production item or system provided—

a. The item or system has been type classified as standard or approved for limited production.

b. The unit and support personnel have been trained to operate and maintain the item or system in an operational environment.

c. The unit can be supported in an operational environmental in such areas as special tools, test equipment, repair parts, documentation, and training devices.

Integrated Product and Process Development (IPPD)
A management technique that simultaneously integrates all essential activities through the use of multidisciplinary teams to optimize the design, manufacturing and supportability processes. IPPD facilitates meeting cost and performance objectives from product concept through production, including field support. One of the key IPPD tenets is multidisciplinary teamwork through integrated product teams (IPTs).

Integrated product team (IPT)
A working level team of representatives from all appropriate functional disciplines working together to build successful and balanced programs, identify and resolve issues, provide recommendations to facilitate sound and timely decisions. IPTs may include members from both Government and industry, including program contractors and sub-contractors. Mandatory procedures for IPTs in the oversight and review process are described in DoD Regulation 5000.2R.

Interoperability
The ability of systems, units, or forces to provide services to, and accept services from, other systems, units, or forces and to use these services to enable them to operate effectively together.

Logistician
A command or agency responsible for the independent logistic surveillance and evaluation of materiel acquisition programs. The logistician is appointed by ODCSLOG.

Major automated information system acquisition program (MAISAP)
An AIS acquisition program that is designated by the ASD(C3I) as a MAISAP, or estimated to require program costs in any single year in excess of $30 million in FY 1996 constant dollars, total program costs in excess of $120 million in FY 1996 constant dollars, or total life-cycle costs in excess of $360 million in FY 1996 constant dollars.

Major defense acquisition program (MDAP)
An acquisition program that is not a highly sensitive classified program (as determined by the Secretary of Defense) and that is—

a. Designated by the USD(A&T) as an MDAP.

b. Estimated by the USD(A&T) to require an eventual total expenditure for research, development, test and evaluation of more than $355 million in fiscal year (FY) 1996 constant dollars or, for procurement, of more than $2.1 billion dollars in FY 1996 constant dollars.

Major System
A combination of elements that shall function together to produce the capabilities required to fulfill a mission need, to include hardware, equipment, software, or any combination thereof, but excluding construction or other improvements to real property. A system shall be considered a major system if it is estimated by the USD(A&T) to require an eventual total expenditure for RDT&E of more than $140 million in FY 1996 constant dollars, or for procurement of more than $645 million in FY 1996 constant dollars.

Manpower and Personnel Integration (MANPRINT)
The comprehensive technical effort to identify and integrate all relevant information and considerations regarding the full range of manpower, personnel capabilities, training development and delivery, human factors engineering, system safety, health hazards, and soldier survivability into the system development and acquisition process to improve soldier performance, total systems performance, and reduce the cost of ownership to an acceptable level throughout the entire life cycle of a system. MANPRINT is the Army's Human Systems Integration process for systems acquisition.

Materiel developer (MATDEV)
The RDA command, agency, or office assigned responsibility for the system under development or being acquired. The term may be used generically to refer to the RDA community in the materiel acquisition process (counterpart to the generic use of CBTDEV).

Materiel Developments
The conception, development, and execution of solutions to materiel requirements identified and initiated through the combat developments process, translating equipment requirements into executable programs within acceptable performance, schedule, and cost parameters.

Milestone (MS)
A milestone is the major decision point that initiates the next phase of an acquisition program. MDAP milestones may include, for example, the decisions to begin engineering and manufacturing development, or to begin either low-rate initial or full-rate production. MAISAP milestones may include, for example, the decision to begin program definition and risk reduction.

Milestone decision authority (MDA)
The individual designated in accordance with criteria established by the USD(A&T), or the ASD(C3I) for AIS acquisition programs, to approve entry of an acquisition program into the next phase.

Operational architecture(OA)
OA contains text, graphic models to show functions and information required, graphic representations of how the Army organizes and equips to execute C4 processes, and a data base to provide detailed characteristics about information exchanges, such as format voice/data/imagery), speed of service, perishability, and criticality. The OA will show relationships among organizations and functions in terms of the information they need, use, and exchange.

Overarching integrated product team (OIPT)
The OIPT is a team led by the appropriate OSD technical director, and composed of the PM, PEO, component staff, and USD(A&T) staff, the joint staff, and other OSD staff

principals, or their representatives, involved in the oversight and review of a particular MDAP for which the USD(A&T) is MDA. The OIPT provides strategic guidance, for the early resolution of issues as well as oversight and review as the program proceeds through its acquisition life-cycle.

Preplanned product improvements (P3I)
Planned future evolutionary improvement of development systems for which design considerations are effected during development to enhance future applications of projected technology. It includes improvements planned for ongoing systems that go beyond the current performance envelope to achieve a needed operational capability.

Program, project, product manager (PM)
Is a HQDA board-selected manager for a system or program. A PM may be subordinate to either the AAE, PEO, or a materiel command commander. Refers to the management level of intensity the Army assigns to a particular weapon system or information system. As a general rule, a program manager is a general officer or Senior Executive Service (SES); a project manager is a colonel or GS 15; a product manager is a lieutenant colonel or GS 14.

Standardization
The process of developing concepts, doctrines, procedures, and designs to achieve and maintain the most effective levels of compatibility, interoperability, interchangeability, and commonality in the fields of operations, administration, and materiel. Standardization is the process by which nations achieve the closest practicable cooperation among forces, the most efficient use of research, development, and production resources, and items.

Systems architecture (SA)
SA is the physical layout, depicted graphically, showing the relationship of the information exchange and connectivity requirements. The SA identifies components, capabilities, and establishes interconnections among command, control, communication, and computer (C4) components of systems. The SA can be developed for an individual system or at higher levels to depict the integration of numerous systems into a 'system of systems' architecture.

Technical architecture (TA)
TA is comparable to a building code, not telling you what to build (operational architecture (AO)) nor how to build (system architecture (SA)), but rather delineating the standards to which build to and to pass inspection. The TA identifies a framework of standards and includes top level system specifications, and architectural diagrams for technical interface specifications.

Threat
Ability of an enemy, or potential enemy, to limit, neutralize, or destroy effectiveness of current or projected mission, organization, or item of equipment. Statement of that threat is prepared in sufficient detail to support Army planning and development of concepts, doctrine, training, and materiel. Statement of a capability prepared in necessary detail, in context of its relationship to specific program or project to provide support for Army planning and development of operational concepts, doctrine and materiel.

Trainer
The agency that trains personnel to operate and maintain development items or systems. For most equipment, this is TRADOC.

Training developer (TNGDEV)
Command or agency that formulates, develops, and documents or produces training concepts, strategies, requirements (materiel and other), and programs for assigned mission areas and functions. Serves as user (trainer and trainee) representative during acquisitions of their approved training materiel requirements (MNS and ORDs) and training program developments.

Training development
The conception, development, and execution of solutions to training requirements identified through the combat development process. The solutions may include new or revised training programs, material, methods, media, and system and nonsystem training devices.

Training devices
Training aids, devices, simulators, and simulations (TADSS) which simulate or demonstrate the function of equipment or weapon systems. These items are categorized as follows:

a. Standalone TADSS. An autonomous item of training equipment designed to enhance or support individual or collective training.

b. Embedded. Training that is provided by capabilities designed to be built into or added onto operational systems to enhance and maintain the skill proficiency necessary to operate and maintain that system. Embedded training capabilities encompass four training categories:

(1) Category A—Individual/operator. To attain and sustain individual, maintenance, and system orientation skills.

(2) Category B—Crew. To sustain combat ready crews/teams. This category builds on skills acquired from Category A.

(3) Category C—Functional. To train or sustain commander, staffs, and crews/teams within each functional area to be utilized in their operational role.

(4) Category D—Force Level (Combined Arms Command and Battle Staff). To train or sustain combat ready commanders and battle staffs utilizing the operational system in its combat operational role.

c. System. A TADSS item that supports a specific materiel system or family of systems program.

d. Nonsystem. All TADSS not defined as system TADSS.

e. Simulators. A training medium that replicates or represents the functions of a weapon, weapon system, or item of equipment generally supporting individual, crew, or crew subset training. Simulators may stand alone or be embedded.

f. Simulations. A training medium designed to replicate or represent battlefield environments in support of command and staff training. Simulations may stand alone or be embedded.

User
TOE or TDA command, unit, element, agency, crew or person (soldier or civilian) operating, maintaining, and or otherwise applying DTLOMS products in accomplishment of a designated mission.

User representative
Presents the user view point during DTLOMS requirements determination, documentation, and acquisition processes.

Validation
The review of documentation by an operational authority other than the user to confirm the need or operational requirement. As a minimum, the operational validation authority reviews the MNS, confirms that a nonmateriel solution is not feasible, assesses the joint service potential, and forwards a recommendation to the MDA for MS 0 action.

Warfighting requirements
Warfighting Requirements are requirements for ACAT I-IV weapons and materiel systems, automated information systems, IT programs, special access programs, and clothing and individual equipment in direct use by or support of the Army warfighter in training for and conducting operational missions (tactical or other), or connecting that warfighter to the sustaining base.

Section III
Special Abbreviations and Terms

AAE
Army Acquisition Executive

ACAT
acquisition category

ACM
advanced concept manager

ACP
Army cost position

ACSIM
Assistant Chief of staff for Installation Management and Environment

ACTD
advanced concept technology demonstration

ACT II
Advanced Concepts and Technology II

ADCSOPS
Assistant Deputy Chief of Staff for Operations and Plans

ADCSOPS-FD
Assistant Deputy Chief of Staff for Operations and Plans-Force Development

ADM
acquisition decision memorandum

AIS
automated information systems

AMEDDC&S
U.S. Army Medical Department Center and School

AoA
analysis of alternatives

APB
acquisition program baseline

ARSTAF
Army Staff

AS
acquisition strategy

ASA(FM&C)
Assistant Secretary of the Army (Financial Management and Comptroller)

ASA(IL&E)
Assistant Secretary of the Army (Installations, Logistics and Environment)

ATA
Army Technical Architecture

ATD
advanced technology demonstration

AWE
Army warfighting experiment

BLEP
battle lab experimentation plan

BPR
business process reengineering

C4I
command, control, communications, computers, and intelligence

CAIV
cost as an independent variable

CARDS
Catalog of approved requirements documents

CASCOM
Combined Arms Support Command

CBTDEV
combat developer

CDR
commander

CDS
container delivery system

CEP
concept evaluation program

CIC
critical intelligence category

CIO
chief information officer

COIC
critical operational issues and criteria

COTS
commercial off-the-shelf

CPA
Chairman's Program Assessment

CPIPT
cost performance integrated product team

CPR
Chairman's Program Recommendations

CRD
capstone requirements document

CTC
combat training center

DAB
Defense Acquisition Board

DCSINT
Deputy Chief of Staff for Intelligence

DISA
Defense Information Systems Agency

DISC4
Director of Information Systems for Command, Control, Communications & Computers

DL
distance learning

DPG
defense planning guidance

DTD
digital topographic data

DTLOMS
doctrine, training, leader development, organization, materiel, and soldiers

E3
electromagnetic environmental effects

FDSC
failure definition and scoring criteria

FFR
force feasibility review

FOC
future operational capability

GOWG
general officer working group

HEMP
high-altitude electromagnetic pulse

HFEA
human factors engineering analysis

HHA
health hazard assessment

HRI
horizontal requirements integration

HSI
Human Systems Integration

HTI
horizontal technology integration

ICT
integrated concept team

INFOSEC
information security

IPPD
integrated product and process development

IPS
integrated program summary

IPT
integrated product team

ISEW
intelligence, security and electronic warfare

IT
information technology

JRB
JROC Review Board

JROC
Joint Requirements Oversight Council

JSOR
Joint Service operational requirement

JWCA
Joint Warfighting Capabilities Assessment

KPP
key performance parameter

LSA
logistical support analysis

MAISRC
Major Automated Information Systems Review Council

M&S
modeling and simulation

MANPRINT
manpower and personnel integration

MATDEV
materiel developer

MDA
milestone decision authority

MDAP
major defense acquisition programs

MDEP
management decision package

MDR
milestone decision review

MEDCOM
U.S. Army Medical Command

MEP
mobile electric power

MILDEP
military deputy

MILSTD
military standard

MNS
mission need statement

MOP
memorandum of policy

MP
mission profile

MS
Milestone

NCSC
Nuclear and Chemical Survivability Committee

NCSCS
Nuclear and Chemical Survivability Committee Secretariat

NDI
nondevelopmental item

NMS
National Military Strategy

NSTD
nonsystem training devices

OA
operational architecture

O&S
operational and support

OMS
operational mode summary

ONS
operational needs statement

OPTEC
U.S. Army Operational Test and Evaluation Command

ORD
operational requirements document

P3I
preplanned product improvement

PA&E
Program Analysis and Evaluation

PEO
program executive officer

PI
product improvement

PPBES
planning, programming, budgeting, and execution system

PPBS
planning, programming, and budgeting system

PSA
principal staff assistant

QCR
qualitative construction requirements

QRC
quick reaction capability

R&M
reliability and maintainability

RDA
research, development and acquisition

RDE
research, development and engineering

RFP
request for proposal

SAG
study advisory group

S&I
standardization and interoperability

S&T
science and technology

STO
science and technology objectives

SES
Senior Executive Service

SMMP
system MANPRINT management plan

SOW
statement of work

SSA
system safety assessment

SSv
soldier survivability

STA
system threat assessment

STAR
system threat assessment report

STD
system training device

STRAP
system training plan

TADSS
training aids, devices, simulations, and simulators

T&E
test and evaluation

TDR
training device requirements

TEMP
test and evaluation master plan

TISO
threat integration staff officer

TMA
training mission area

TMDE
test, measurement, and diagnostic equipment

TNGDEV
training developer

TSP
threat support plan

TSR
training support requirements

TTSP
threat test support packages

USAMRMC
U.S. Army Medical Research and Materiel Command

USANCA
U.S. Army Nuclear and Chemical Agency

USASOC
U.S. Army Special Operations Command

USD(A&T)
Under Secretary of Defense (Acquisition and Technology)

VCSA
Vice Chief of Staff of the Army

WIPT
working integrated products team

WRAP
Warfighting Rapid Acquisition Program

Index

This index is organized alphabetically by topic and subtopic. Topics and subtopics are identified by paragraph number.

USAPA

ELECTRONIC PUBLISHING SYSTEM
TEXT FORMATTER ... Version 2.45

PIN: 004469–000
DATE: 08-11-98
TIME: 15:24:43
PAGES SET: 27

DATA FILE: e85.fil
DOCUMENT: AR 71–9
DOC STATUS: REVISION